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FLORA AND FAUNA IN SANSKRIT LITERATURE

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SANSKRIT LITERATURE

Dr S. C. Banerji

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PREFACE

The works in Sanskrit present an integrated picture of India through ages. It is not proper to think that these are purely literary works or speculative treatises or religious lucubrations. Human civilisation cannot be conceived without plants, beasts and birds. In human life these have always played a vital rôle. Indian society is no exception to this general law of life. The part, played by the plant-kingdom and the animal kingdom in Indian life, as revealed in Sanskrit literature, has not yet been studied exhaustively. There have been studies on herbs relating to Āyurveda. The flora and fauna of some works have been studied.

It is our object to study the flora and fauna as revealed in Sanskrit works starting from the *Ṛgveda* down to classical times. The task is a stupendous one, and the difficulties are many. In the first place, the number of Sanskrit works is legion. Secondly, many of the works have not yet been fully indexed. As a workable plan, we have selected the representative works of each period for the purpose. Thus, for the Vedic period, we have taken the *Ṛgveda* and the *Atharvaveda*. The *Yajurveda* is ritualistic, and the *Sāmaveda* mainly musical. So, these two have been omitted except for just a few references.

Coming to the Brāhmaṇas, we have selected the principal works.

The Upaniṣads being mainly speculative and esoteric have been generally left out.

Of the Vedāṅgas, we have chosen the Kalpasūtras and Vyākaraṇa, as the others will not be of much help in this work. Among Kalpasūtras again, the Śulbasūtras being not of any use have not been taken into account. The *Śrauta-sūtras* being concerned with details of sacrifices, do not serve our purpose. In Vyākaraṇa, we have selected the *Aṣṭādhyāyī* as the oldest and most authoritative one. The *Aṣṭādhyāyī* is explained by the *Mahābhāṣya* which has, therefore, been taken into account.

Of the epics, both the *Rāmāyaṇa* and the *Mahābhārata* have been selected.

Regarding Purāṇas, we have selected only those whose flora and fauna have been studied

As regards classical Sanskrit literature, the number of poetical, prose and dramatic works is huge. Again, there has not yet been an index verborum of most of the works. Of late, A. Scharpé has made an attempt to compile a Kālidāsa lexicon The work is not yet complete. The author of the present work compiled *Kālidāsa-kośa* as early as 1968. On the basis of that work, the flora and fauna of Kālidāsa have been included. Kālidāsa may be taken as the most reliable representative of the classical writers So, his poetical and dramatic works may be regarded as giving a picture of this aspect of the India of the classical period. Doubts have been expressed about the authenticity of the *Kumārasambhava*, Cantos IX–XVII, and the *Ṛtu-saṃhāra* Still these have been taken into account in describing the flora and fauna of Kālidāsa. Other apocryphal works, attributed to him, like the *Nalodaya*, *Śṛṅgāra-rasāṣṭaka*, etc., have been left out.

Among prose works, the *Kādambarī* and the *Harṣacarita* of Bāṇabhatta have been selected as representative.

Our work is not intended to be a mere catalogue of the plants and animals in ancient India. Under the entries, attempt has been made to lay down their relation to cultural and social life. Thus, it is a sort of study of the Indian society in plant and animal perspectives. From the perusal of this work one can know the various uses of trees and plants in those days. As regards beasts, birds and fish, one can learn which of them were used as food and which were prohibited. One can try to ascertain the scientific reason, if any, underlying the prohibition

In some of the works, consulted by us there are processes for the luxuriant growth of trees, leaves and flowers. There are also methods of the treatment of diseased trees. Again, some trees are stated to be beneficial in a house while others are injurious. Ancient Indian wisdom has proved to be of a high order in many spheres of practical life, e.g., astronomy, medicine, politics, art of warfare, etc. So, the above information should not be condemned as naive beliefs or superstitious ideas. One of our objects in composing this work is that it would

stimulate a spirit of scientific enquiry about the practical wisdom of the ancient Indians relating to botany, and the modern scientist will get many of the botanical observations of the Indians at one place and in a systematic manner so that he can test their veracity. Some of the botanical information, contained in Sanskrit treatises, may add to the existing fund of knowledge in this branch of science.

What has been stated above is applicable also to the information about fauna in Sanskrit works. Besides being of historical interest, it may add to the existing quantum of knowledge about zoology, ichthyology, ornithology and general biology.

The names of medicinal plants and herbs, mentioned in medical treatises, have already been collected in such works as *Bhāratīya Vanauṣadhi* by Biswas and Ghosh, *Indian Medicinal Glossary of Vegetable Drugs in Bṛhat-trayī* by Singh and Chunekar, and *Vanauṣadhi-darpaṇa* of V Sengupta. So works on Āyurveda have been left out for the present purpose.

A few words about the plan of the work. In the introduction we have dealt with the general characteristics of the flora and fauna as revealed in the Sanskrit works. Then follow the lists of plants and animals. Under each item we have given, as far as practicable, the modern botanical or zoological name as the case may be. Then follow the references to the sources. After the references, such sociological and cultural information as can be gathered has been set forth.

To all the earlier workers in the field we express our gratitude. All the works, consulted by us, have been mentioned in the bibliography Our special thanks are due to Prof. Ajit Banerji of Zoology Deptt of Presidency College, Calcutta, and Prof P. Sen Sarma of Botany Deptt. of Bangabasi College, Calcutta, the former for help in the portion on fauna and the latter for suggestions in the portion on flora. Sri S Chaudhury, Librarian, Asiatic Society, Calcutta, has obliged the author by helpful suggestions.

The author takes the opportunity to thank Prof. Kalyani Datta of Basanti Devi College, Calcutta, for kindly lending valuable books from her personal library which is dearer to her than her life.

The author's daughter, Dr. Chanda Chakraborty, of the above college, and last not the least, his wife, Sm. Ramala Banerji, have been of constant help at various stages of the work. His relationship with them leaves no room for thanksgiving.

The author of this work will be grateful if specialists in the field supply additional references, and offer suggestions for the improvement of the work.

The proprietor of Naya Prokash was good enough to accept the work readily and to undertake its publication within a short time. The author is grateful to him.

Durgā-pūjā,
1384 B. S.
(October, 1977)

S. C. Banerji

N.B. There may be certain observations which are contrary to science. We have followed the tradition, recorded in Sanskrit lexicons and relevant works, without examining it scientifically. For example, under Vanaspati we have stated that it is a tree that bears fruits but no flowers. But, it is a botanical absurdity according to botanists.

ABBREVIATIONS

[N. B. The references to the different *Kāṇḍas* of the *Rāmāyaṇa* are based on the Bengal recension, Calcutta Skt. Series ed.]

A *Abhijñāna-śakuntalā* of Kālidāsa, NSP ed., Bombay.
AB—*Aitareya Brāhmaṇa*
Ādi—Ādikāṇḍa
AK—*Amarakośa*
AP—*Āpastamba-dharmasūtra*
Ara—Araṇyakāṇḍa
Ayo—Ayodhyākāṇḍa
B—*Baudhāyana-dharmasūtra*
CU (Ch. U)—*Chāndogya Upaniṣad*
G—*Gautama-dharmasūtra*
H—*Harṣacarita*
JB—*Jaimini Brāhmaṇa*
K—*Kumārsambhava*
Kāṭh. Sam.—Kāṭhaka Saṃhitā
Kaus. Sūtra—*Kauśika Sūtra*
Kis—Kiskindhākāṇḍa
KS—*Kāmasūtra* of Vātsyāyana
Mait. Sam.—*Maitrāyaṇī Saṃhitā*
Mal—*Mālavikāgnimitra* of Kālidāsa, NSP ed., Bombay, 1950.
MP—*Matsyapurāṇa*
MS—*Manu-smṛti*
MV—*Matsya-vinoda* a section of the *Mānasollāsa*
Pan—Pāṇini
PB—*Pañcaviṃśa Brāhmaṇa*
R—*Raghuvaṃśa*
Ram—*Rāmāyaṇa*
RS—*Ṛtusaṃhāra*, included in *Kālidāser Granthāvalī*, in Bengali characters, Calcutta, 1322 B.S.
RV—*Ṛgveda*
SB—*Śatapatha Brāhmaṇa*

Sun—Sundarakāṇḍa
SVB—*Sāmavidhāna Brāhmaṇa*
TB—*Taittirīya Brāhmaṇa*
Taitt. Sam.—Taittirīya Saṃhitā
TS—*Taittirīya Saṃhitā*
Utt—Uttarakāṇḍa
UV—*Upavana-vinoda*
V—*Vikramorvaśīya* of Kālidāsa, ed. Velankar, New Delhi, 1961.
V$_1$—*Viṣṇu-smṛti*
Vāj Sam.—*Vājasaneyi Saṃhitā*
Vas—*Vasiṣṭha-dharmaśāstra*
VP—*Vāyupurāṇa*
VS—*Vājasaneyi Saṃhitā*
Yud—Yuddhakāṇḍa
YS—*Yājñavalkya-smṛti*

CHRONOLOGY OF THE WORKS CONSULTED

Ṛgveda—C. 1500 B C.

Brāhmaṇas—between the conclusion of hymn composition of *Ṛgveda-saṃhitā* and the rise of Buddhism.

Kalpasūtras—approximately synchronous with the rise and first spread of Buddhism.
(including Gṛhya and Dharmasūtras)

Aṣṭādhyāyī of Pāṇini—C. 4th. cent. B.C.

Arthaśāstra of Kauṭilya

Suśruta-saṃhitā—Originated in the last centuries before the Christian era, and appeared during the first centuries A D. in a well-defined form. Present from fixed by the 7th. cent. A D., according to some.

Manu-smṛti—between 200 B C. and 200 A.D.

Yājñavalkya-smṛti—present form supposed to have been composed during the first two centuries of the Christian era.

Mahābhāṣya of Patañjali—C. 2nd. cent. B.C.

Rāmāyaṇa—present form C. 2nd. or 3rd cent. A.D.

Tattvādhigama of Umāsvāti—C. 135-219 A.D.

Mahābhārata—present form C. 4th. cent. A.D.

Purāṇas—Vāyu (bet. 4th cent. B.C. and 500 A.D.)

Kālidāsa—C. 400 A.D.

Amarakośa
or
Nāmaliṅgānuśāsana—C. 4th. cent. A.D.

Bāṇabhaṭṭa—earlier half of the 7th cent. A.D

Mānasollāsa of Someśvara—1129 A.D.

*Mallināth*a—C. latter half of the 14th. cent. or earlier half of the 15th.

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INTRODUCTION

Man was born in the cradle of nature. As the child grew up he became aware of his surroundings. As sense dawned upon him, he saw, with an admiring eye and a mind filled with awe, the various aspects of nature—the vast expanse of the sky, the sun, the moon, the cloud above him and the plant and animal kingdoms surrounding him.

With trees, plants and shrubs the familiarity and association of man were the most intimate and friendly. He encountered the hostile forces of nature like storms, thunder, ferocious beasts and birds. But, trees and plants were always favourable to him As man saw the light of civilisation, he felt the need of covering his body partly out of a feeling of shyness and partly to keep off cold and the uncongenial effect of weather. The trees provided him with barks. Gradually as he emerged from caves and caverns, he felt the necessity of shelter. In this respect also trees provided the timber and logs for building their living rooms or huts. Again, the bountiful nature, like a benign mother, gave him abundant and varied fruits for appeasing his hunger. With the discovery of fire he felt the need of fuel which was plentifully and perennially supplied by the plant kingdom. The trees provided cotton for making thread which was woven into garments. The supreme importance of the plant world lies in its gift of various kinds of foodgrain which sustained the lives of people. In ancient times in India, fire was kindled by rubbing two pieces of wood against each other.

With the progress of civilisation, he learnt to use plants and herbs, the roots of some trees as drugs for curing various diseases.

In course of time, certain trees became objects of veneration. We often meet with the *caitya-vṛkṣa* which was the designation of a religious fig tree or any other tree growing by the street or a fig-tree standing on a sacred spot. Fetishism is found as early as Vedic times. Some trees were worshipped while others were believed to be haunted by evil spirits. As instances of the attribution of divinity to plants with particular reference to their efficacy in healing diseases we may mention RV. X. 97, AV. VI. 136. 1, etc. The AV. mentions a number of amulets, prepared with plants and creepers, designed to ward off evil spirits and cure diseases. It was believed that, as a result of some offence committed towards the *Śamī* tree, one was afflicted with baldness which was regarded as extremely loathsome even in Vedic times. The wood of some sacred trees, e.g. *udumbara* was used in sacrifices. The king's throne (*āsandī*) at the

coronation, the razor for shaving used in some holy rites, etc. were made of *udumbara* wood. The *Khadira* wood was used in making *Yūpas*, stakes for animal-slaughter in religious rites and as the staff of a Kṣatriya Brahmacārin. The *Bilva* and *Palāśa* trees provided the staff of a Brāhmaṇa Brahmacārin.

In Vedic India we find that various agricultural and sacrificial appliances and vessels were made of wood The *Vibhītaka* tree (RV VII. 86. 6 , X. 34. 1) supplied the wood with which dice (*akṣa*) were made The juice, extracted from *Soma*, which has not yet been definitely identified, was regarded as the most exhilarating drink.

The familiarity of ancient Indians with the various matters relating to the plant kingdom is evident from such terms as *Vṛkṣāyurveda* which means the science of treatment of plant diseases. The *Sītādhyakṣa* (Superintendent of agriculture) of the *Arthaśāstra* was required to have knowledge of this science.

As time went on, the *tulasī* plant acquired great sanctity in the Purāṇas and Vaiṣṇava-śāstras.

Gradually man came to learn a lot about the medicinal value of fruits, roots, herbs, leaves, etc. In ancient India, we find a great many plants of therapeutic value.

In course of time, the flowers provided by plant kingdom served to give delight to people, and came to be used as offerings to gods and presents to near and dear ones on happy occasions. By the time Vātsyāyana, author of the *Kāmasūtra,* flourished the house of a man about town (*nāgaraka*) could not be conceived without a garden.

Trees played a considerable part in the administration of kingdoms. The practice of planting saplings of shady fruit trees along public roads, and laying out gardens for public use dates back to remote antiquity This practice had a religious sanction and public gardens were solemnly consecrated. The planting of trees has been proclaimed as conducive to great merit (e g. *Matsya-Purāṇa,* Chap 154, Verses 511-12, Chap. 59, Verses 17-20, *Agni*, Chap. 70, Verses 1-9 , *Varāha*, Gokarṇa-māhātmya, Padma, Chap. 26).

Some Purāṇas lay down the benefits derived from trees

(e.g. *Agni*, Chap. on *taḍāga-vṛkṣa-praśaṃsā*, Chap. on Varuṇa... pratiṣṭhā ; *Varāha*, Gokarṇa-māhātmya).

Trees came to be regarded as so important that their felling or deforestation without reason and permission was looked upon as a penal offence (e. g. *Manu-smṛti* viii 285, 330, 331 ; ix. 143, 145). Degrees of punishment, commensurate with the gravity of offence in this connexion, have been prescribed (e.g. *Matsya-purāṇa*, Chap. 227, Verses 91-95).

Indian civilisation was mainly based on forests. The Upaniṣads, the products of the highest human wisdom, originated in sylvan surroundings. The sages of old meditated in the sequestered forest far away from the madding crowd of people, and gave the world gems of thought. That the solitude of the forest was favourable to meditation is attested by the very title *Āraṇyakas* (forest-texts) of which the Upaniṣads formed parts. The forest provided shelters not only to the recluse but also to worldly men in the third stage (*Vānaprastha*) of their lives. Gautama practised transcendental meditation under the Bo-tree, and attained Buddhahood.

The epics and Purāṇas contain descriptions of many trees, plants and flowers. The Pañcavaṭī forest in the *Rāmāyaṇa* conjures up a vivid picture of the forest-abode of Rāma in exile. We read of the wanderings of the homeless Pāṇḍavas through forests.

Sanskrit prose, poetical works and dramas are replete with references to flowers and foliage, trees and shrubs. Flower gardens are found to be a favourite resort of lovers to whom they serve as excitants (*uddīpana vibhāva*). In the *Abhijñāna-Śakuntalā*, we find the three hermitage girls of peerless beauty, engaged in watering plants. The natural setting excites the love of the king for Śakuntalā. The bower provides a convenient spot for love-making to the king and the girl. Forests, particularly bowers, have often been described as very suitable for tryst. *Cala sakhi kuñjaṃ satimira-puñjam* (let's go to the bower steeped in a mass of darkness)—this line in the *Gītagovinda* of Jayadeva sets the seal of high romance in such a spot. *Revā-rodhasi vetasa-tarutale cetaḥ samutkaṇṭhate* (the heart becomes eager for the cane-bower on the river Revā or Narmadā)—this

a glowing line showing the erotic urge of the beloved for a place of assignation provided by clusters of plants. It has been immortalised in Vaiṣṇava literature as a passionate desire of the beloved for union with Kṛṣṇa.

Some trees have to be favourite to poets, and have become conventional For example, the *Tamāla* tree has been mentioned by Kālidāsa in the *Raghuvaṃśa* (XIII) as adding to the beauty of the sea-coast. Again, Jayadeva, in his *Gītagovinda*, sings of the *Tamāla* trees darkening the forest-regions under the sky overcast with clouds. At some places, we find damsels using floral decorations. For instance, in the *Meghadūta* (II. 2) *women* of the city of Alakā are described as holding a lotus in hand, putting on the *Śirīsa* flower in the ears and the *Nīpa* or *Kadamba* flower in the parting of hairs. Many romantic ideas are conventionally associated with trees. For example, the *Aśoka* tree is said to put forth its crimson blossoms at the touch of the foot of a woman. Again, the *Bakula* tree is stated to bear flowers with the spittle of a woman sprinkled on it.

Trees have been objects of description by various poets. For example, the anthology, *Sadukti-Karṇāmṛta* quotes five verses (Nos. 1881–1885 of Calcutta ed.) by various poets dwelling on the comfort caused by trees to human beings. The *Aśvattha*, sandal-tree, mango-tree, silk-cotton tree are some of the trees described by poets. For example, see *Sadukti-karṇāmṛta* (Calcutta ed., Nos. 1891–1905, 1911–1915).

The Sanskrit poets and writers have cast their admiring eyes on trees. With a passion for learning they have sought to derive lessons from them. For example, among the didactic verses we find some dealing with what trees have to teach us. In the *Abhijñāna-Śakuntala* (V 12), Kālidāsa observes that trees, laden with fruits, bend low, from this we learn that a good man should not be puffed up with prosperity. The *Hitopadeśa* points out that the tree does not withdraw its shade even from one who axes it. From this we should learn that we should not refrain from doing good even to an enemy who seeks our shelter. The tree bears the scorching heat on its head, but assuages the fatigue of one who resorts to its shade. This

teaches us that, though suffering pain, we should do good to others.

Thus, the ancient Indians did not rest content by merely utilising trees for their comfort and convenience. They also tried to derive lessons from them, and enjoyed the beauty of the trees and their blossoms. That they looked at trees from various angles of vision is attested by the fact that, whereas we have the single word 'tree' in English, there is quite a number of words in Sanskrit to convey this meaning; each of these words brings out a characteristic feature of the tree. For example, the noted lexicon *Nāmaliṅgānuśāsana*, popularly known as *Amarakośa*, gives the following words to denote tree, the respective derivative meaning[1] is given against the words.

Vṛkṣa—Vṛścyate Chidyate (that which is cut)

Mahīruha—that which grows on the earth

Śākhī—that which has branches

Pādapa—padair mūlaiḥ pibati (that which drinks sap with roots)

Taru—taranti anena ātapam (that by which people overcome heat)

Anokaha—anasaḥ śakaṭasyākaṃ gatiṃ hanti (that which obstructs the pace of a cart)

Kuṭha

Śāla

Palāśī—that which has leaves

Dru

Druma—drur vṛkṣaikadeśo'syāsti (that which has a part of the tree)

Agama—na gacchati (that which does not move).

The word *Vanaspati* (lit. lord of the forest) appears to have originally denoted trees in general. The meaning of the term came to be contracted in latter times when it used to mean a tree bearing fruits without flowering.

1. We give the meanings in Sanskrit, as laid down by Kṣīrasvāmin, the commentator. Where the commentator has not suggested any etymological meaning, we have given the meaning in English. Where neither the commentator suggests a meaning nor is the meaning clear, we could not give any conceivable clarification.

The word *vana* appears in the early stages to denote trees in a collective sense.

Thus, we find that trees were intimately associated with the life of the ancient Indians. Naturally a spirit of enquiry grew among them as to the effect of trees growing near their dwelling places. While some trees were regarded as salutary, others were looked upon as bad. This sort of speculation originated as early as the Vedic period. We have seen above that Vedic people believed some trees to be haunts of evil spirits. For example, *Gobhila-grhyasūtra* (IV 7) holds that *Aśvattha* involves danger of fire to the house, *udumbara* leads to optical diseases etc. In the *Bṛhat-saṃhitā*, such trees as *Aśoka*, *Punnāga*, etc. are conducive to welfare. Some Purāṇas (e.g *Matsya*, Chap. 255, *Brahmavaivarta*, Chap. 102 etc.) dwell on this topic

It is interesting to note that the scientific spirit of enquiry about the plant kingdom led the ancient Indians to discover that plants and trees also have life—a consciousness which arose at a time when most other contemporary civilised countries were ignorant of the fact. This is proved by the *Ṛgveda* (X 97 21), *Manu-smṛti* (1. 49), *Mahābhārata* (Śānti. Chap. 184)

It should be noted that ancient Indians did not merely indulge in superstitious ideas about trees and plants. They not only appreciated the beauty of trees and flowers and recognised their utility, but also developed a regular science of Botany.

We do not know of a single work devoted exclusively to Botany But, the knowledge of the ancient Indians about different branches of this science is borne out by works on Āyurveda, Kṛṣiśāstra, Dharmaśāstra, Arthaśāstra, etc. as well as by some lexicons. Terms like Vṛkṣāyurveda, Vanaspati-vidyā indicate subjects included in Botany.

Botanical information of various kinds can be gathered from the books or from portions of the books noted below[1].

(In Chronological Order)

Ṛgveda (*c.* 1500 B.C.)

x. 97 15, 21 ; x. 117 ; x. 145, etc.

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1. Only the principal works are mentioned. Of the portions of books, only a few prominent ones are noted

Atharvaveda (Probably after 1500 B.C.)

ii. 8.3 ; viii. 7 ; x. 7 38; xi. 6.10, etc.

Upaniṣads (*c.* 1000-600 B.C.)

Bṛhadāraṇyaka—iii. 9, iv. 6.1.

Chāndogya—i.1.2 ; vi. 12.1, 2.

Aṣṭādhyāyī of Pāṇini (*c* 4th. cent. B.C.)

Mahābhāṣyā of Patañjali (*c.* 2nd cent. B.C.)

Mahābhārata (Present from—*c.* 4th. cent. B.C. to 4th cent. A.D.[1])

Śānti-parvan, Chap. 184.

Purāṇas (Early works composed before 7th. cent. A.D [2]).

Agni-purāṇa—Chaps. 13, 70, 194, 246, 248, 281, 282,

Padma-purāṇa—Chap. 26.

Matsya-purāṇa—Chaps. 59, 154, 227/91-95, 255, 256.

Varāha-purāṇa—Gokarṇa-māhātmya.

Viṣṇu-purāṇa—4/25, 7/37-39.

Bhāgavata-purāṇa (10th cent. A.D.[3])—Skandha iii. 10/ 19, 20.

Vāyu-purāṇa (Chaps. 3, 6, 8, 24, 35, 37, 38, 41, 43, 45, 47, 49, 57, 62, 63, 65, 69, 70, 72, 75, 77, 78, 91, 94 etc.

Manu-saṃhitā (present form between 4th cent. B. C. and 4th cent. A.D.[4]) i. 46-49

Arthaśāstra (about 300 B.C.[5]).

Bṛhatsaṃhitā of Varāhamihira (*c.* 1st cent. B.C.[6]). Chaps. 53, 54, 58.

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1. See Winternitz, *History of Indian Literature*. I. P. 465.
2. *Ibid.* p. 525. According to some, the compilation of the *Vāyupurāṇa* extends from the 5th cent B.C. to 500 A.D. (See D. R Patil, *Cultural History from Vāyupurāṇa*, pp. 4, 16.)
3. *Ibid.* p. 556.
4. P. V. Kane : *History of Dharmaśāstra*, I. p. 151.
5. *Ibid.* p. 104.
6. Keith : *A History of Sanskrit Literature* (1928), p. 528.

Caraka-Saṃhitā (*c.* 1st cent. A.D.[1]).

Sūtra-sthāna—I. 36, 37 ; Chaps. 4 and 27

Śārīra-sthāna—III. 22-26.

Kalpa-sthāna—V. 3.

Suśruta-Saṃhitā (Earlier than Caraka, but exact time unknown[2]).

Sūtra-sthāna—I. 23 ; XXXV. 34-42 ; Chap. XXXVIII.

Śārīra-sthāna—II. 33 , III. 18 ; IV. 20-23.

Kāmasūtra of Vātsyāyana (*c.* 500 A.D.[3]).

Nāmalingānuśāsana (*c.* 6th cent. A.D.[4]).

Vanauṣadhi-varga—135.

Bhūmi-varga—8.

Kāmandakiya Nītisāra (*c.* 700 A.D.[5]).

XIV. 27-42.

Kṛṣi-parāśara (between *c.* 5th and 11th cent. A.D.[6]).

Śārṅgadhara-paddhati (13th cent. A.D.[7]).

Chap. entitled Upavana-vinoda.

Śukranīti (Date unknown. Not a very early work).

IV. 2.56, 57 ; IV. 4.91-108 ; 113-114, 123-124.

Besides the above, the following works[8] also contain some materials of the Botanical science. Hemacandra's *Nighaṇṭuśeṣa*, Buddhaghoṣa's commentary called *Sumaṅgala-vilāsinī* and *Dhanvantarinighaṇṭu*.

We briefly set forth below the materials of this science that can be gleaned from the above works. The various kinds of information may be arranged under the following broad heads in accordance with modern Botany :

1. Morphology
2. Plant Physiology

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1. *Ibid.* p. 506.
2. *Ibid.* p. 506.
3. *Ibid.* p. 469
4. *Ibid.* p. 412.
5. *Ibid.* p. 463
6. See *Kṛṣi-parāśara*, ed Asiatic Society, Calcutta.
7. See G P Majumdar, *Upavana-vinoda*, p. 1.
8. For other works, see. B. N. Seal: *Positive Sciences, etc.*, p. 169

3 Taxonomy
4. Ecology

1. Morphology :

This branch of Botany is divided into external morphology and internal morphology or histology. Both these divisions were known to the Indian scientists. The *Atharvaveda* is the earliest work to reveal the knowledge of external morphology In this Veda (VIII 7) trees of various descriptions are mentioned , e.g. those having spreading branches (*viśākhāḥ*) and those having leaves with long clusters (*mañjarī*), those which are bushy (*stambinī*), those which expand (*prastṛṇatī*), those having only one sheath (*eka-śuṅga*), those which creep (*pratanvatīḥ*), those having many stalks (*aṃśumatī*), those which are knotty or have joints (*kaṇḍinī*). The *Vājasaneyī Saṃhitā* (22-28) and *Taittirīya Saṃhitā* (7 3.20.1) state the different parts making up a plant. These are *mūla* (root), *tūla* (panicle), *kāṇḍa* (stem), *valśa* (twig), *puṣpa* (flower) and *phala* (fruit). Besides these, a tree has *skandha* (corona), *śākhā* (branch), *parṇa* (leaf). Pāṇini mentions the different parts of a tree in different *sūtras*. Under I 219 Patañjali mentions these together. These are *mūla* (root), *skandha* (trunk), *phala* (fruit), *palāśa* (leaf) According to Pāṇini (IV. 1. 64), plants were named after the characteristics of their leaves, flowers, fruits and roots ; e.g. *śaṅkhapuṣpī* (having flowers white-like conch-shells), *bahumūlī* (having many roots). From Pāṇini (IV 3. 43) we learn that plants and creatures were called after the names of their flowering seasons , e.g. *vāsantī kundalatā* as illustrated by the *Kāśikā* The *Viṣṇupurāṇa* mentions (VII 37-39) the various parts of trees, viz. sprouts, roots, trunks, leaves and flowers Parasitic plants growing on trees were not unknown in ancient India. Mushroom is mentioned in Suśruta's Sūtrasthāna (Chap. 46). From the mention of *eka-patra*, *dvi-patra*, *tri-patra* and *sapta-parna*, it is clear that, in those times, leaves, both single and joint, were known. In accordance with their shape, the leaves were variously designated as *aśva-parṇaka* (*Shorea robusta*), *mūṣika-parṇī* (*Salvinia*) etc.

The different stages in the growth and bloom of flowers are differently named Before blossoming they were called *koraka*, *kalikā* ; when blooming they were styled *kuṭmala*, *mukula*. When in full bloom, they were described as *sphuṭa*, *vikaca*, etc.

The use of words like *bīja-kośa* (seed-vessel), *Śasya* (endosperm) and *bīja-patra* (cotyledon) demonstrates that different parts of seeds were not unknown in those far-off ages.

Gross histology was very well-known The people knew of the existence of the wood and pith inside the trees. In the *Bṛhadāraṇyaka Upaniṣad* (Chap. III—Brāhmaṇa IX), the bone, flesh, marrow and nerve of the human body have been stated to be like the wood, *śakara*[1], pith and fibrous tissue of the tree Guṇaratna, in his commentary on the six philosophical systems, observes that, like the wounds on human body, those on trees also can be healed up by the application of medicaments

2. Plant Physiology :

In his commentary on the *Ṣaḍ-darśana-samuccaya*, Guṇaratna holds that, as human body is nourished by milk and other articles of food, so also fertile land and water contribute to the nourishment of trees. Want of proper nutrition impairs both human body and the body of trees. It is with their roots, corresponding to human mouths, that trees absorb the sap ; this is why they are called *pādapa* (that which drinks with foot). The intake of food by trees and plants, the distribution of food over their different parts, assimilation of food and the vital rôle played in the matter by wind—these have been beautifully described in the *Mahābhārata* (Śānti-Parvan—Ch. 184). These are fully in accord with the modern science of Botany [2]

Works like the *Arthaśāstra*, *Bṛhat-saṃhitā* and *Agni-purāṇa* contain rules for planting trees. The people used to believe in

1. The portion just below the bark.
2. See G. P. Majumdar, Vanaspati, pp. 31-33.

the benign and malign influences of stars on the planting of trees[1]. Different seasons were supposed to be good for planting different kinds of saplings. According to the *Bṛhat saṃhitā*, winter is the best season for planting trees whose braches have not grown. Dewy season and the rainy season have been prescribed for planting respectively those trees which have grown their branches and those whose branches have become mature. Besides growing trees from seeds the ancient Indians knew the process of growing trees from the cut branches as well as by grafting the branch of one tree to that of another. Trees grown by planting the branches cut from other trees are called *Kāṇḍa-ropā* in the *Bṛhat-saṃhitā*. Two methods of grafting appear to have been adopted. The branch of one tree used to be grafted to the root or trunk of another tree. While planting trees, sufficient space was kept between them so that the root of one could not be mixed with another resulting in damage to them[2]. Watering has been prescribed for the growth of plants. The proper time for watering is morning and evening in summar and afternoon in winter. In the rainy season, water should be sprinkled only when the earth is dry.

The ancient Botanists knew various methods of keeping the ground fertile and sappy, they knew quite well that trees and plants drew sustenance from the earth. There are elaborate rules regarding this matter in the *Bṛhat-saṃhitā*, *Agni-purāṇa* and *Upavana-vinoda*. The *Atharva-veda* was, perhaps, the earliest treatise to contain such rules. An admixture of the prescribed quantities of sesamum, goat's dung, barley-powder, beef and water was regarded as a very effective manure. Cowdung was considered to be a good fertiliser even in remote ages.

The *Bṛhat-saṃhitā* contains detailed procedure of preserving seeds. Seeds, mixed with ghee, are to be thrown into milk. The next day, they are to be separately kept. After repeating this process for ten consecutive days, the seeds have to be

1. Cf. Bṛhat-saṃhita, Chap. 54.
2. Vide *Agni-purāṇa*, 281/8-9.

smeared with cowdung. Then these have to be heated in pots full of the flesh of boars or deer. Such seeds will lead to the growth of flowering trees A different method is prescribed for preparing the seeds with a view to growing trees rich in foliage For the development of trees, particularly mango-trees, the washing of fish is to be sprinkled according to the *Agni-purāṇa* (Chap. 194).

Diseases of plants and their treatment have been dealt with in the *Bṛhat-saṃhitā* (Chap. called *Vṛkṣāyurveda*), *Agni-purāṇa* (Chap 281) and *Upavana-vinoda*. Guṇaratna, in his commentary, has also dealt with the subject. Excessive increase or decrease of heat and violent wind are some of the causes of the maladies of trees. Yellowish colour of the leaves, under-development of the buds, dryness of the branches, exuding of juice—these are some of the symptoms of their diseases. A decoction of *Kulattha* (*Dolichos biflorus*), *Māṣa* (*Phaseolus radiatus Var Roxburghii*), *Mudga* (*Ph. mungo*) *Tila* (*Sesamum indicum*) and *Yava* (barley) is to be applied to roots of trees in order to cure them of barrenness. As preventives of diseases, the following articles are prescribed for application to the roots of trees, mud mixed with ghee, milk mixed with water and *Viḍaṅga* (*Embelia ribes*) mixed with fish and flesh.

The sleep[1], waking up and reaction to touch, etc. have been mentioned in Dharmottara's commentary on the *Nyāyabindu* and Udayana's *Kiraṇāvali*. Guṇaratna, in his commentary, has noticed the reaction to touch on the part of creepers and shrubs like *Mimosa pudica*. He has further observed that as the lotus blooms at sunrise and the lily at moonrise, so also some flowers bloom at particular times.

In some treatises,[2] like human beings trees also have been described as having infancy, childhood, youth, old age and death. Guṇaratna mentions 10,000 years as the longest period of life of trees. Their death is attributed to disease and lack of food.

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1. The contraction of leaves at night has been described as their sleep.
2. e. g. Guṇaratna's commentary.

As stated above, the ancient Indian was aware of the consciousness of trees. In the *Bhāgavata-purāṇa* (III. 10. 19, 20), trees have been declared to be threefold : *ut-srotasaḥ* (taking sap upwards), *avyakta-caitanya* (with subdued consciousness) and *antaḥsparśa* (with inward sensation of touch)[1]. According to Udayana, trees and plants have very slight consciousness. The Śāntiparvan of the Mahābhārata speaks of their reaction to cold, heat, thunder, good and bad smell.

The ancient Indian had some idea, though not scientifically accurate, of the process of procreation among trees as a result of the union of the male and the female species. The division made by them, of trees into male and female is not based on scientific basis. According to Caraka, *Kuṭaja* has male and female species. Those which have white flowers and bear large fruits are male. Those which have red or yellow flowers and bear small fruits are female.

The idea of rotation of crops is found in the *Taittirīya-saṃhitā* (V. 1. 7. 37, which is a very early text.

3. Taxonomy :

In ancient India, trees were designated by terms which referred either to their external features or to their efficacy. For instance a tree with curved flowers was called *Vakrapuṣpa* (*Sesbania grandiflora*), and as it contained property that could cure boils it was called *Vraṇāri* (lit. enemy of boils or sores).

The following classification of trees is found in ancient Indian works :

(a) Botanical classification
(b) Classification according to properties
(c) Classification based on food-value

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1. For the consciousness of trees and plants, see G. P. Majumdar, *Vanaspati*, pp. 53-58.

(a) Botanical classification[2]

In the *Ṛgveda*[1], the earliest work of the Indo-Aryans, trees have been classified as *phalinī* (bearing fruits), *aphalā* (not bearing fruits), *apuṣpā* (devoid of flowers), and *puṣpiṇī* (having flowers). In the same Veda, the plant-kingdom has been divided into *Vṛkṣa* (tree), *Gulma* (shrub), *Bheṣaja* (medicine), and *Latā* (creeper). *Oṣadhi* is also a Vedic term for a class of trees.

In the Dharmasūtras, a two-fold division of trees is discernible. The broad divisions are *Oṣadhi* and *Vanaspati*. Govindasvāmin, commentator on the *Baudhāyana-dharmasūtra*, has sub-divided *Oṣadhi* into *Vallyauṣadhi* and *Tṛṇauṣadhi*; to the former class belong *Kulutthā*, etc. and to the latter *Vrīhi* (paddy). Pāṇini also appears to classify forests as (1) *Oṣadhi-vana*—those producing herbs, e.g. *dūrvā-vana*, *mūrvā-vana* and (1) *Vanaspati-vana*—those producing timber trees, e.g. *devadāru-vana* (VIII. 4 8). It should be noted that Pāṇini used the word *Vana* in a two-fold sense, natural and cultivated. Natural forests are like *Puragāvaṇa*, *Miśrakavana*, etc. (VIII. 4.4) and cultivated groves are *Āmravana*, *Ikṣuvana*, etc From Pāṇini IV 1. 49 and Kātyāyana's *Vārtika* on it we learn that an ordinary forest was called *araṇya*, while an extensive forest was known as *araṇyānī*

The following classification of trees and plants is found in the *Manu-smṛti* (1. 46-48) :

(i) *Oṣadhi*—a tree of this class dies after the ripening of fruits

(ii) *Vanaspati*—those which bear only fruits, but not flowers

(iii) *Vṛkṣa*—those which bear either fruits alone or flowers alone

(iv) *Gulma*—Shrubs

(v) *Tṛṇa*—lit. grass

(vi) *Pratāna*—Plants with tendrils

(vii) *Valli*—Creepers entwining a support

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1. Only a few of the works are mentioned here. For a detailed account, see G. P Majumdar, *Vanaspati*, pp. 79-89

2. X 97 15 For Vedic classification of plants, see *Cultural Heritage of India* (R K. Mission), 3.42 and *Vedic Index*, 1.125.

According to the Sūtra-sthāna (1 36, 37) or Caraka, trees and plants are of four classes :

(i) *Vanaspati*—See above

(ii) *Vānaspatya*—Trees bearing flowers followed by fruits

(iii) *Oṣadhi*—See above

(iv) *Vīrudh*—Same as *latā* and *gulma* above[1]

Suśruta's classification is like that of Caraka

In the *Bhāgavata-purāṇa* (III. 10 19), the classification is as follows .

(i) *Vanaspati*—See above

(ii) *Oṣadhi*—See above

(iii) *Latā*—Corresponding to *Valli* of Manu above

(iv) *Tvaksāra*—Those whose bark is very tough ; i.e. bamboo

(v) *Virudh*—Shrubs looking like clumps.

(vi) *Druma*—Those which bear both flowers and fruits.

From the *Vāyu-Purāṇa* (8 149-156, 157 , 69. 338-41) we gather that the plants were broadly divided into two classes—*grāmyāraṇya* and *yajñiya oṣadhis*. *Grāmyāraṇya* probably includes two types, viz. *grāmya* (growing in rural areas) and *āraṇya* (wild). The term *oṣadhi* appears to denote trees in general From the various references the following calssification can be made out :

Latā—comprising *vanaspati* (without flowers) and *vṛkṣa* (bearing flowers and fruits)

Valli—comprising *gulma* and *tṛṇa-jāti* (grassy plants)

Virudha

The MP. (8 2-3, 154. 304, 161.58, 178.47, 227 36, 39, 92, 108 etc.) appears to classify the plant-kingdom as follows :

Vṛkṣa, gulma, latā, virudh, valli.

Oṣadhi, a generic name of trees, is divided into *kṛṣṭa* (grown on cultivated land) and *svayaṃjāta* (growing by themselves).

The remark that some plants and creepers bear flowers, seems to suggest those which do not do so.

The flowers are divided into *jalaja* (growing in water) and *sthalaja* (growing on land).

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1. *Vide* Cakrapāṇi's commentary.

In the *Upavana-vinoda* (verse 43) trees and plants have been divided into *Vanaspati, Druma, Latā* and *Gulma*. In the same context, these are stated to grow from seed, stem and bulb. The mango-tree, the jack-fruit tree, etc. grow from seeds. The *Sindhuvara, Tagara*, etc. grow from stems. *Rasona, Kuṃkuma*, etc. grow from bulbs. *Dāḍima, Mallikā*, etc. grow from seeds and stems. The lotus and some other plants grow from seeds and bulbs.

In Vaiśeṣika philosophy, Praśastapāda gives the following classification :

Tṛṇa, Auṣadhi, Latā, Avatāna,[1] *Vṛkṣa* and *Vanaspati*.

The following classification is found in the Vanauṣadhi-varga and Vaiśya-varga and the *Nāmaliṅgānuśāsana* :

(i) *Kāṣṭhadāru*—Those which bear fruits and have trunks

(ii) *Kṣupa*—Those having short roots (*śilphā*) and branches

(iii) *Latā*

(iv) *Auṣadhi*

(v) *Tṛṇa*—bamboo belongs to this class.

(vi) *Tṛṇa-druma*—Trees like coconut, date and areca-nut trees.

(b) Classification according to properties[2]

Caraka, in Sūtra-sthāna (iv), broadly divides trees and plants into Purgative and Astringent. According to him, 600 species belong to the first class and 500 to the second. The latter class has been sub-divided into ten groups (*Varga*)[3], Suśruta has divided (Sutrasthāna, xxxviii) the entire plant-kingdom into 37 classes (*gaṇa*).

(c) Classification based on food-value

Caraka's classification is as follows (Sūtra-sthāna xxviii)

(i) *Dhānya-varga* (Graminaceae)—those corns which have husk. These have been sub-divided into eleven varieties ; e.g. *Śāli, Vrihi, yava, Godhūma*, etc.

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1. Same as *Gulma*.
2. For the names of trees healing diseases, occurring in ancient Indian works, see K. Biswas and K. Ghosh, *Bhāratiya Vanauṣadhi* (in Bengal.), Calcutta.
3. See G. P. Majumdar, *Vanaspati*, pp. 90-98.

(ii) *Śamīdhānya-varga* (Leguminosae)—twelve kinds of corns, viz. *mudga, māṣa,* etc

(iii) *Śāka-varga*—18 varieties of vegetables belong to this class

(iv) *Phala-varga*

(v) *Harid-varga* (green class)—*ārdraka* (*Zingiber officinale*), *mūlaka* (*Raphanus sativus*), *Palāṇḍu* and *Laśuna* (*Allium cepa* and *Allium sativum*) etc. belong to this class

(vi) *Āhārayogi-varga*—Oils of sesamum, mustard, etc. belong to this class.

In his Sūtrasthāna, Suśruta's classification is as given below (*i*) *Śālidhānya*, (*ii*) *Ṣaṣṭika*, (*iii*) *Vrihidhānya*, (*iv*) *Kudhānya-varga*, (*v*) *Vaidala*, (*vi*) *Tila*, (*vii*) *Yava*, (*viii*) *Śimba*, (*ix*) *Phala-varga*, (*x*) *Śāka-varga*, (*xi*) *Puṣpa-varga*, (*xii*) *Udbhid-varga*, (*xiii*) *Kāṇḍa-varga*, (*xiv*) *Talla-varga* and (*xv*) *Ikṣu-varga*.

The *Nāmaliṅgānuśāsana* mentions a number of corns and condiments as articles of food and commerce.

The following classification occurs in the *Bhāvaprakāśa*.

(i) *Harītakyādi-varga*,
(ii) *Karpūrādi-varga*
(iii) *Guḍucyādi-varga*
(iv) *Puṣpa-varga*
(v) *Vaṭādi-varga*
(vi) *Āmrādiphala-varga*
(vii) *Dhānya-varga*
(viii) *Śāka-varga*
(ix) *Talla-varga*
(x) *Ikṣu-varga*.

4. Ecology

The growth and development of trees depend, to a great extent, on climate and the nature of the soil. According to nature, soils have been divided by Caraka (Kalpa-sthāna, 1) into the following classes and the names of the trees and plants growing on them have been mentioned by him.

I. *Jāṅgala* (Arid)—The trees growing on such lands are called Xerophytes in modern science ; e.g. *Khadira* (*Acacia catechu*). *Sala* (*Shorea robusta*), *Vadari* (*Zizyphus jujuba*).

II. *Anūpa* (marshy)—Trees growing on such a soil are called Hydrophytes and Hygrophytes , e.g. *Hintāla* (*Phoenix peludos*).

III Common soil—Trees of the Mesophytes class grow on such soil, e.g. *Vanaspati*, *Vānaspatya*, etc.[1]

The classification of soils is similar in the *Upavana-Vinoda* and Suśruta (Sūtra-sthana-35). Some ecological information is found in the *Bṛhat-saṃhitā* (Chap. 54) and *Nāmaliṅgānuśasana* (Svarga-varga).

The ancient Indians used to believe that, in the order of creation, trees and plants preceded the creatures [2] Botany was regarded as a science to be learnt. This science was utilised in various ways in practical life. By means of botanical knowledge the future growth and availability of crops could be forecast[3]. From certain signs in the trees and plants, excessive rainfall or drought could be predicted. In agricultural operations, the knowledge of Botany served useful purposes, as is borne out by such works as the *Bṛhat-saṃhita* and *Kṛṣi-parāśara*.

From the foregoing pages it is abundantly clear that botanical speculations started in India in hoary antiquity. In fact, India cultivated this science in howsoever a rudimentary form, at a time when most of the ancient lands, including Greece and Rome, did not have much idea of it. The *Ṛgveda* attests the high antiquity of this science in India

There was remarkable progress in the medical science of India through botanical knowledge. The treatment of diseases with herbs having medicinal properties is borne out by the Ṛgveda[4] and the Atharva-Veda. With the progress of medical

1. For meaning, see above.
2. Cf *Chāndogya Upaniṣad*, 1 1.2, and *Rāmāyana* (Uttara-Kāṇda, Canto 72)
3. Cf. *Bṛhat-saṃhita*, Chap. 29.
4. vii. 18 ; x 145 etc.

science from the *Atharva-veda*[1] down to the age of Caraka and Susruta, the knowledge of the plant kingdom grew to an appreciable degree. From the *Atharva-veda* we learn that trees and plants were used not only for the preservation and improvement of health but also for the acquisition of sons and warding off the influence of evil spirits.

The science of Botany and trees played a vital rôle in the life of the people in various other ways too[2]. Trees were utilised for making dress, furniture and vehicles. In some religious festivals, the use of certain trees and plants was indispensable. Trees also provided the people with materials for trade and commerce. These were also some reasons why the science of Botany had to be cultivated.

In modern times, the American Botanist, Luther Barbank, made astounding contributions to this science by bringing into existence some botanical products out of a combination of several things[3]. India can justly feel proud of the fact that the creation of Botanical marvels was not absolutely unknown in this country even in the remote past. The *Brhat-samhitā* (Chap. 54) and *Upavana-vinoda* contain evidence of this fact. For instance, in the latter work, we find a process of producing fragrant flowers in a tree that bears odourless flowers. To the root of such a tree is to be applied earth mixed with fragrant flowers. Then a decoction, made with the bark of the trees called *Dhava* (*Grislea tomentosa* or *Anogeissus latifolia*) and *Khadira* (*Acacia catechu*), is to be sprinkled and the tree should be smeared with ghee and fumigated with the smoke of incense. We are informed that red cotton may be grown in the very tree in which white cotton grows.

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1. I/2, 3, 23, 24 ; II/7, 25 ; IV/17, 18, 20, 37 ; V 4, 14, 15 ; VI/85 ; XIX/39, etc.
2. For details, see G.P. Majumdar, *Some Aspects of Indian Civilisation*, etc.
3. For example, he produced a fruit called Primus-berry out of a combination of Black-berry and Rasp-berry. Some such marvels are associated also with the names of Lysenko and Michurin. For details about this topic, see Harwood : *New Creations in Plant Life*, 1905.

In ancient India, the art of grafting plants was well known. The matter has been dealt with by P. K. Gode[1]

The stately banyan tree figures prominently in Sanskrit literature starting from the Vedic age It is amusing to find that the people of the age of Brāhmaṇas conceived a regular hierarchy in the kingdom of plants.

Thus the *Nyagrodha* was regarded as a Kṣatriya[2], the *Aśvattha* as the emperor[3], *Palāśa* as a Brāhmaṇa[4] The *Plakṣa* (*Ficus infectoria* is also looked upon as royal[5]

Some Brāhmaṇas mention a few aromatic plants and trees, e.g. *juggulu*, scented grass[6] of some types.

The lotus is frequently mentioned in some Brāhmaṇas.

Bāṇabhaṭṭa had an eye for colour. In his two works, *Kādambarī*[7] (K) and *Harṣacarita*[8] (H), he reveals his intimate familiarity with the rich plant kingdom[9] From his works it appears that he knew of the following species of plants

1. *Oṣadhi* (herb)—H 444, 449.
2. *Virudha* (weak plant)—H 81, K 117.
   The different types of *Virudha*, mentioned by him, are *latā* (e.g. H 42, 411 etc.), *bāla-latā* (e.g. H 50, 221), *Vana-latā* (H 431), *bhavana-latā* (H 213) and *mārga-latā* (H 54).
3. *Gulma, Stamba, Veṇi* (shrub)—H 84, 215, 419, 441, K 366.
4. *Vṛkṣa, Taru, Druma, Pādapa* (tree —H 97, 28, 123, 414, K 74.

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1 *Indian Culture*, Vol XIII, No 1, 1946.
2. *Aitareya Brā*, 7.35 5.
3. *Ibid.* 7 35.6.
4. *Śatapatha*, 1.1.1 4, 13 8.4.1
5. *Aitareya*, 7 35 6.
6 Popularly known as *Khaskhas* now-a-days.
7. Chowkhamba ed (2nd), 1961
8 Do. 1964.
9 For details, see P V Sharma Botanical Observations of Bāṇabhaṭṭa, *Sanskrit and Indological Studies* (*Rāghavan Fel. Vol*), p. 369 ff)

Among the different types of trees are *Vanaspati* (K 74), *Mahā-vanaspati*, *Mahātaru*, *Tungataru* (H 161, 162, K 200) and *Kṣīri-vṛkṣa* (milk-exuding tree—H 444, K 199).

Bāṇabhatta's works testify to his knowledge about the different parts of a plant Thus, he mentions :

Aṅkura (*Praroha*)—H 28, 42, 253

Asthi (stone)—H 407

Bīja (seed)– H 84

Kāṇḍa (root)—K 121, H 429, 432

Synonyms *Mūla*, *Supha*, *Jata* were also mentioned.

Kalikā—H. 17

The synonyms *Korka*, *Mukula*, *Kuḍmala* also occur.

Kusuma (flower)—H 33

Clusters of flowers are called *Guccha*, *Stabaka*, parts of a flower like *Kośa* (interior), *Dala* (petal) *Kesara* (stamen), *Dhūli* (pollen) etc. are mentioned

Pallava (leaf)—H 35

The following synonyms are also mentioned *Dala*, *Parna*, *Patra*.

Phala (fruit)—H 37, K 53 etc.

Sarasa phala (juicy fruit), *Śalāṭu* (unripe fruit) etc. are mentioned Also mentioned are *Phala kosi* (legume, outer cover), *Sphuṭadbīja* (Capsular).

Bāṇa knows the places where different plants grow These are *Vana-aṭavī* (H 36, K 37 3 etc), *Mahāṭavi* (H 441), *Vanānta* (H 296,, *Vanagrāmaka* (H 98), *Ārāma* (H 164), *Udyāna* (H 79), *Upavana* (H 249), *Vāṭikā* (H 175).

The plants at the entrance were called *Pradeśa-pādapa*

Bāṇa had a keen awareness of the appeal that the plant kingdom made to a person The rustling sound of dry leaves appealing to the ear is mentioned in H 82, 83 The pleasant touch of the lotus (H 48), jasmine flowers (H 455) etc. is described The unsteady nature of banana leaves and the sharp points of the *Kuśa* grass have caught the vision of the poet (K 125) Bāṇabhaṭṭa, a lover of colours, has mentioned the white, yellowish white, grey, saffron, yellow, green, red black, blue colours of plants and flowers in different contexts ; this

shows the wide range of his familiarity with these species. The sweetness of fruits like grapes (*drākṣā*) has appealed to his taste. *Candana*, *Elā*, etc., having fragrance, have been mentioned by him

The regions of Vindhya hills and the Himalayas have been mentioned by him as the principal habitats of plants.

That Bāṇabhaṭṭa had a keen power of observation is indicated by the fact that he states the changes that take place in the plants in different seasons. The following are some of the passages throwing light on this matter

H 33, 34, 38, 79–88, 142–143, 177, 193, 215, 334, 393, 405.
K 33, 204, 242, 267, 422.

Below are arranged in alphabetical order the names of plants found in ancient Sanskrit literature :

Abaya
Breassica yuncea
AV iv 35.5
Used against supernatural agencies

Abdaka
MP 118 6

Abhaya (Abhayā)
AK 122.165
AK 95.59
MP 217.75
It is recommended in MP for storing in a fort.

Abhīru
AK 106.101

Adhyāṇḍā
Mucana pruriens Phyllanthes Winaria
P niruri
SB xiii. 8, 1, 16

Adara
Zingiber officinale
AV iv. 35 5

Abja (Same as Puṣkara, Kamala, Ambhoja, Aravinda).
R IV. 61
RS vi. 33

Āḍhakya
VP 8.152

Ādityamustaka
MP 118.17

Agada
AK 114 50

Agama
AK 80.5

Agastiphala
MP 96 9

Agnijavālā
AK 112 125

Agnimantha
AK 97.66
KS IV. 1 29

Agnimanya
MP 217 79
Recommended for storing in a fort

Agnimukhi
AK 91.43

Agniśikhā
Glorioya superba L.
AK 110.119
115.137

Aguru (Agaru)
Aquilaria agallocha
R VIII. 71, XIX. 41
AK 96.63
RS V. 12
VP 75.32
MP 161 63
Mentioned in VP in connexion with *Śrāddha*.

Aheru
AK 106.102

Aila
MP 217 66
Recommended for storing in a fort

Ailāka
MP 96.7

Airaṇḍaka
MP 217 46
Recommended for storing in a fort.

Airāvata
AK 90.38
UV 50

Ajagandhikā
AK 116.140

Ajabā
AK 102 87

Ajāji
MP 62 9

Ajamodā (Ajamoda)
(Ajmada *Carum roxburghtana Benth*),
AK 117 145
KS IV. 1.6
MP 118.40, 217 63
In MP, recommended for storing in a fort.

Ajarūṣa
AK 107.104

Ajaśṛṅgi
Odina Wodiar. Gymnema sylvestre.
AV iv. 37
AK 111.120
In AV supposed to destroy demons.

Ajjhaṭā
AK 113.127

Ājjukan
UV 13

Ākalla
MP 118.11

Ākanda
Calotropis procera
UV 26

Ākṛiḍa
AK 80 3

Akṣa
Terminalia balerica
The seeds of its fruits appear to have been stringed together to be used as rosaries

Akṣiva
AK 87 31

Akṣoṭa (or Akṣoṭaka)
Aleurites triloba,
MP 118 6, 2.7.53
VP 38 66
AK 87 29
In MP recommended for storing in a fort.

Āla
Weed of cornfield.
AV vi 16 3

Alarka
AK 101 81

Alābu (Alābu)
Lagenaria vulgaris.
AV viii. 10, 29, 30; xx. 130.
Maitrāyaṇi Saṃhitā, iv 2. 13 vi. 79.17
KS IV. 1 29
AK 120.156
UV 8
MP 118 27
In Vedic literature, vessels are stated to be made of it

Alaśālā
Grain Creeper
AV vi. 16 4

Āli-(Tree ?)
AK 80.4
Alpamārṣa
AK 115.136
Āluka
UV 43
KS IV. 1.29
(Prācina) Āmalaka (Āmalaki) or Amalā
Phyllanthus emblica
Jaiminiya Upaniṣad Brāhmaṇa i. 38, 6
Chāndogya Upaniṣad, vii. 3.1
Kad 53
H 16
UV 27
KS IV. 1.7
VII 1.26, VII. 2.36
AK95. 58
UV 9
MP 96.7, 118 4, 7, 161 61, 217.57, 75
Āmaṇḍa
AK 93. 52
Amāmsī
MP 118.38
Ambaṣṭha
AK 98.72
102.85
116.141
Ambikā
Ambuja
VP 94.37
MP 62.24
RS III. 20, IV 4, 5; VI 14
K XI. 25, XIV. 13
AMBHOJA (See Abja).
Amburuha
RS VI. 7
Amāna
MP 60.38, 81.38
Amlavetasa
MP 217.55
AK 116.141
Recommended for storing in a fort.
Āmlika
Tamarindus indica L.
vi 61 5.14
Amblikā
AK 91 44
Ambuja (See Abhja)
R XIII. 60
Āmiṣī
AK 114.134
Amlāna
AK 99.47
Amogha
AK 94.55
107.106
Āmra (Also see Cūta, Sahakāra)
Mangifera indica
MC 18
A VI. p 192
K VIII. 78
RS VI. 23
AK 88 33
UV 27
VP 69.307–8
MP 96.11, 187 29, 257 8
Āmrātaka
AK 86 27
UV 8
KS IV. 1.29

VII. 2 33, 46
MP 96.,5 118 8, 2.7 55-56

Amṛta
(Amṛtaphala -*phyllanthus emblica* L)
AK 95.58, 59
101 83
MP 217 65
In MP, recommended for storing in a fort.

Amūla
Gloriosa Superba Cascata Sp
AV V. 32 4
Described as rootless

Ananta
(Anantalatā—Antigonon leptopus Hook and Arn.)
AK 103 92
115.137
121.159
MP 217.76

Anāryatikta
AK 117.143

Āṇḍika 16
Nymphaea alba
AV IV. 35, 5 ; 17, 16
Edible plant leaf. Root egg-shaped

Aṇḍira
MP 217 65
Recommended for storing in a fort

Aṅgāraṭṛṇa
KS VII 2.45

Aṅgāravallarī
AK 93.49
AK 103 90

Aṅghriparṇikā
AK 104.93

Aṅguṣṭhika
UV 26

Aṅjana
MP 118.12, 217 77
Recommended for storing in a fort.

Aṅjanakeśī
AK 113.130

Aṅkola
UV 22

Aṅkoṭa
AK 87 29

Aṅkurāsphoṭā
MP 217.73
Recommended for storing in a fort.

Aṇu
Panicum miliaceum
Vājasaneyi Saṃhitā, xviii. 12
Bṛhadāraṇyaka Upaniṣad, vi. 3, 13
VP 8 150

Apāmārga
Achyranthas aspera L
AV. iv 7, 6 ; 18.7 ; 19, 4 ; vii. 6. 2
Vājasaneyi Saṃhitā, xxxv. 1.
Taittirīya Brāhmaṇa i. 7, 8, SB v. 2·4, 14 ; xiii. 8, 4, 4
Nirukta, iv. 17 2
vi 61.14
AK 103.89
UV 26
MP 93.27, 215.31

Aparājitā
Clitoria ternatea L.
AV ii. 27, 3

AK 107 .04
119 150
In AV it is stated to be conducive to prosperity and long life.

Āra
Pan VIII 4 5

Āragvadha
AK 85.23
UV 33

Aralu
Oroxylum indicum
AV xx. 131 17
AK 95.58
Axles of chariot were sometimes made of its wood.

Ārāma
Name of a tree ?
AK 80.2

Arāṭaki (Aratu)
Prosopis spicigera
Accacia suma
AV. iv, 37.6

Aravinda (See Abja)
K 1. 32, III. 56
A III 4
R I. 43, VI. 13, XIII 23, XIV 50, 5
RS IV. 13
K IX 1, 20 ; XIII 12, 17 ; XVII 49

Ardhacandrā
AK 108 109

Ardraka
Zingiber officinale Roscoe
UV 9

Āravata
AK 85.24

Arimeda
vi 61 14
AK 93.50

Ariṣṭa (Ariṣṭaka)
Melia azadirachta L.
vi 61.2
AK 87 31
96.62
118 149
UV 7
MP 118.7, 24 ; 217.53

Arjaka
AK 100 80

Arjuna
Terminalia arjuna
R XVI. 51, XIX. 37
RS II. 17, III. 13
AK 92.45
123 168
H 161
UV 10
MP 118.6, 161.56, 186.40, 217.76, 257 11

Arka
Calotropis gigantea
AV vi. 72 1
SB ix. 1, 1, 4.9
vi 61.14
KS VII 2.36
UV 3
MP 62.24, 68 18, 93 27

Arkāhva
AK 101.81

Arkaparṇa
AK 101 81

Ārtagala
AK 99.75

Aruṇā
AK 106 100

Arundhatī (= Sahadevī)
Sida cordifolia. S. rhombifolia
AV iv. 2, 1 ; v. 5, 5, 9 ; vi. 59. 1, 2 , vii 7, 16 ; xix. 38
Stated to have heating properties and increase cow's milk. Used for protection of cattle.

Aruṣkara
AK 91 43

Āsana
Terminalia tomentosa Bedd
AK 91 44
UV 8
MP 118 13, 217.76, 255.21, 257 8

Aśmagandhā
Withania somnifera
ŚB xiii, 8, 1, 16

Aśmantaka
UV 21

Aśmapuṣpa
AK 111. 123

Aśoka (Same as Kaṅkeli)
Jonesia asoca Roxb
MC 86
V II. 7, IV 62, V. 3
A VII, p. 240
K III 26, 53
R VII. 21, VIII. 62, 63, IX. 28, XIII. 32
Mal III pp. 34, 35, verse 5, p. 40, p. 41, p. 43, verse 12, p. 45, p. 46, p. 50, p. 51, p. 53 ; IV p. 62, p. 70, p. 77, verse p. 80, p. 81, p. 82, p. 83, p. 84, p. 85, p. 92
RS VI. 5, 16
Supposed to blossom at the stroke of the foot a woman
Its leaves are stated to be used by women as ear-decoration.
AK 97.65
UV 3
MP 60.38, 62.24, 118.11, 161.56, 66, 180 43 etc.

Aśokarohiṇī
AK 102.86

Āsphoṭa
AK 101.81
UV 14
AK 98.70
107 104

Asthibija
UV 14

Aśvakarṇa (ka)
Shorea robusta Gaertn
AK 92 45
UV 10

Aśvattha
Ficus religiosa
RV i. 164.20 ; x. 97 5
AV iii. 6, 1 ; iv. 32.4 ; vi. 11 1
ŚB xi. 5, 1 13
AB 7 35 6
G I 25
Pan IV. 3.48
AK 83.18

AK 85.21
UV 3
VP 35 38
According to VP, its sticks are recommended for use in *Śrāddha*. It symbolises the spirit of kingship
In RV X. 97 5 vessels are stated to be made of its wood.
In AV vi. 11 1 its wood is said to be used for kindling fire. In AV iii 6 it is stated as starting life as an epiphyte on Khadira, sometimes strangling it. In RV i. 164.20 its berries are stated to be eaten by birds.

Aśvabāla (Aśvabāra)
Saccharum spontaneum
Maitrāyaṇi Saṃhitā
iii 7.9
Kāṭhakad Saṃhitā
XX iv 8
Kapiṣṭhala Saṃhitā
xxxvi.. 1
SB iii. 4.1, 7

Aśvavati
RV x. 97 7
An unidentified medicinal plant.

Atasi
Crotolaria retusa L.
UV 33

Atarūṣa
AK 107.104

Atibalā
Sida rhombifolia L.
UV 22

Aticarā
AK 117 146

Atichatrā
AK 119 152
AK 123.167

Atimukta
Aganosma caryophyllata
V II 7.1
A III p. 95
Mal IV 13
RS VI 17
Described as climbing a mango-tree. Bowers appear to be formed with *Atimukta* creepers.

At muktaka
AK 86 26
AK 98.72
UV 13

Atisaurabha
AK 88 33

Ativiṣa
AK 106.100
UV 13

Aukṣagandhi
A fragrant plant.
AV. iv. 37 3

Avadāha
AK 122.165

Avakā
Blyxa oryzetorum
AV viii 7, 9 , 37, 8-10
Taittiriya Saṃhitā, iv. 6, 1, 1
V 4, 2, 1 ; 4.3

Vājasaneyī Saṃhitā, X viii.4 , XXV 1
Maitrāyaṇī Saṃhitā, ii 10.1
SB vii 5 1, 11 ; viii 3 2, 5 ; ix 1 2, 20, 22 , xiii 8.3.13
Avakeśin
AK 81 7
Avākpuṣpī
AK 119 153
Avalguja
AK 105 96
KS VII 2 31
Āvalī
AK 80.4
Avandhya
AK 81 6
Avegī
AK 115.137
Avigna
AK 97 68
Avyaṅgā
AK 102 87
Avyathā
AK 95 59
117.146
Badara (Badarī)
Zizyphus Sp.
Kāṭhaka Saṃhitā, xii 10
Maitrāyaṇī Saṃhitā, iii. 11.2
Vājasaneyi Saṃhitā, xix 22.90 ; xxi. 30
Taittirīya Brāhmaṇa i. 8 5, 1
SB V, 5.4.10 ; xii. 7.1.3 ; 2 , 9 ; 9, 1 8 etc
Jaiminīya Brāhmaṇa, ii. 156·5
Vas 1.2.38
KS II 7 18
Pan V. 2 24
AK 119.151
VP 38.66-70
MP 96·6, 118·17, 187.33
The staff of a Vaiśya Brahmacārin is made of the wood of this tree.
Bahupādika
KS VII 2.41
Baja
Brassica Sp.
AV viii. 6, 3, 6.7.24
Used against the demon of disease
Baka
MP 217.79
Bakula
Rottlera tinctoria, Mimusops elengi, Mesua ferrlea.
R VIII. 64, IX 30, XIX. 12
RS II 24
AK 97 65
H 57
MP 118.16, 180.25, 161.56, 255.23
Bāla (Balā ?)
AK 111 122
MP 217.44
Recommended for storing in a fort.
Balbaja (Balvaja)
Elensine Indica. E. Coracana
RV viii. 53.3
AV xiv 2, 22, 23
Tai Sam ii. 2, 8.2
Kāth. Sam x. 10
Mait Sam ii. 2.5

In RV baskets and other things are said to be made from it. In Kāth. Sam it is stated as used for sacrificial litter fuel.
Vp 75·61
Ap 1. 21. 1
AK 122 163
One of the articles in which trade is allowed. According to VP., it is a taboo in *Śrāddha.*

Balakośira
KS IV. 1. 7

Bāṇā
AK 99 75
MP 60 38, 81·28, 118·4

Bandhujīva
Pentapetes phoenicea
K VIII. 40
R XI. 25
RS III. 24
UV 33
MP 62. 22

Bandhūka
RS III. 5, 25
AK 99. 73
H 357
MP 118 18

Barbarā
AK 116. 140

Bayeḍā
(Vaheḍā *Terminalia belerica* Roxb.)
UV 55

Bhadradāru
MP 161·61

Bhadramtā sn
Kad 83

Bhallātaka (Bhallāṭa)
Semecarpus anacordium L.
UV 33
MP 118·23, 217·62
In MP, recommended for storing in a fort.

Bhaṇḍī
VP 69 307-8
Its flowers are taboo in *Śrāddha.*

Bhāṇḍīra
MP 118·30

Bhaṅga
Cannabis sativa
RV ix ; 61, 13
Śāṅkh. Āran. xii. 19
AV xi. 6.15
In RV. it is an epithet of Soma.

Bhaṇṭāki
AK 109 114

Bhāradvāji
AK 110 117

Bhārgi
UV. 21

Bhṛṅga
KS VII. 2.31

Bhṛṅgarāja
Wedelia calendulacca Less.
AK 119 152
MP 217 71
In MP, recommended for storing in a fort.

Bhūmipuṣpa
MP 118·4, 217.39, 77

Bhūnimba
AK 117 143

Bhūrja
Betula bhojpattra. K I. 7, 55, V II. 11·2, 17 10
18.1 4, 9.19 1, 3 R IV. 73
Its bark is stated to be used as writing material. Its soft bark is stated to be used as garment.
H 386
MP 118 4, 217·39, 77

Bhūruṇḍī
AK 98.70

Bhūstṛṇa
MP 118·39, 217·64
Recommended for storing in a fort.

Bhūtumbī
MP 217·69
Recommended for storing in a fort.

Bibhītaka
AK 95 58
UV 3
MP 118 4, 217·75
In MP, recommended for storing in a fort.

Bijapūraka (Bījapūra)
Citrus madica.
Mal.
AK 100.79
UV 10, 13
MP 118·20, 161·64, 217·56
Its fruit is regarded as auspicious and worthy of presentation.

Bilva
Aegle marmelos.
AV XXI. 136 3 A. B. ii. 1
S. B. XIII. 4 4, 8 etc.
Mait Sam, iii. 9. 3
Tai Sam. ii. 1.8 1.2 (Sacrificial post made of it.)
Sāṅkh Āran. XII. 20 *et. seq*. (amulet made with it).
B 1 14·10
G 1·25
Vas XXVII 12
Vi 61.14
Pan IV 3 136
AK 88 32
UV 3, 20
MP 56·16, 60 34 etc.
Recommended for storing in a fort.
VP 69·307-8
According to VP, its sticks are good for *Śrāddha*. The use of a vessel, made of its wood, is supposed to lead to the acquisiton of wealth.

Bilvasarja
UV 25

Bilvāṭakī
MP 218·2
It is an antidote to poison.

Bimba
Coccinia indica cogn.
Jaim Up Br iii. 5, 6
MP 118·20
A beautiful woman's lips are compared with ripe *Bimba* fruits.

Bimbika
AK 116 139

Bisa
Aconitum napellus L.
V IV 31
K IV. 29, VIII. 35
Supposed to constitute the bow-string of Cupid.

Bisini
Mal V. p 84

Brāhmani
AK 103 90

Brāhmi
Herpestis monniera H.B.&K.
AK 115 138

Bṛhati
AK 104, 94
KS VII. 2.28
UV 52
MP 96·8, 118·28, 217·44
Seeds, smeared with ghee mixed with the powder of *Bṛhati* and *Tila*, are stated to sprout quickly.

Buka
AK 101 82

Cakramardana
MP 118.21

Campaka
Michelia champaka L.
RS VI 29
AK 96.64
H 27
MP 118·14, 18; 161 57, 255·23
UV 3

Caṇaka
Cicer arietinum
Vāj Sam XVIII. 1 2
VP 8·152

Caṇḍā
Andropogan aciculatus
AV VI. 139·3
AK 113 129

Candana
Santanum album L.
K VIII 25
R IV. 48, 51; VI. 64; VIII. 71; X. 42; XI 64
A IV. 144, VII 18
RS I. 4, 6, 8, II. 21; III. 20; V 3, VI. 6, 12, 32
Kad 417
MP 64·16, 118·6 etc.
Serpents are stated to entwine this tree which is spoken of as growing on the Malaya mountain.

Cāṅgeri
AK 116.141

Carmakaṣā
AK 117.144

Caturaṅgalā
MP 217·72

Cavya (Cavyaka)
MP 217·62 118 15

Chatra
MP 217 47
A kind of grass (?)

Chatrā
AK 123.167
UV 23

Chatrāka
See Kavaka

Ciñcā
UV 4

Cińcinī
UV 23, 46
A sacred plant
Cirbhiṭa
MP 96. 10, 118 28
Cirbilva
MP 118 22
Citraka
MP 161 59, 217·62
Citraparṇī
AV ii. 25·3
With spotted leaf, used as protection of foetus.
Citravallphala
MP 96·10
Corakatumbī
KS V. 6 25
Cukraphala
MP 217.57
Cūta
(See Āmra)
V. II 7
A IV. 12, V. 1, VI pp. 189, 189, verses 4, 8, p. 210
K I. 27, II. 64, III. 27 30, 32, IV. 14, 38
R VIII. 21, XIII. 34, XIX. 43
Mal. III. 4, pp 45, 49, IV. 2
KS II. 10·8
MP 161·56
Used in the worship of Cupid. One of Cupid's arrows is made of its blossoms. A mango-leaf is fancied as the lip of the goddess of spring. Blossoms are fragrant. The summit of the Āmrakūṭa mountain is stated to abound in *Cūta* trees.
RS VI. 1, 3, 14, 15, 30
UV 43
Dāḍima
AK 97 65
KS VII 2.28
Kad 53
UV 3
MP 96 6, 118 18, 154·520, 161·64, 217·55, 255·23
In MP recommended for storing in a fort. It is supposed to be auspicious if it grows near a house.
Damanaka
KS IV. 1 29
Dantaśaṭha
MP 217·57
Recommended for storing in a fort.
Dantikā
AK 117 145
MP 217·71
In MP recommended for storing in a fort.
Dantī
UV 21
Dantitvak
MP 217 69
Recommended for storing in a fort.
Darbha
Eragrostis cynosuroides
E. tenella = *E ciliaris*

RV 1. 191·3
AV VI. 43, 2 (used for 7·20 pacifying anger)
VIII. 7.20
X 4·13
XI 6·15
XIX 29·1 etc
A II. pp. 75, 84, III. p. 112
IV. 7, p. 137
R XIII. 25, 39 ; XIV. 69
UV 20
VP 75·17–8, 83, 79
Used for covering the sacrificial altar as well as in *Śrāddha*.

Darbhareṇukā
MP 217·75
Recommended for storing in a fort.

Dāru
Pan IV. 3 152

Dāruharidrā
AK 106 102

Dārvikā
MP 217·49
Recommended for storing in a fort.

Daśavṛkṣa
Av II. 9 1

Devadāru
Polyalthia longifera
Me 113
K I. 15, 54 , III. 44 ; VI. 51
R II. 36, 56 ; IV. 76
KS VII. 2 41
AK 94 54
MP 274·32
Exudes *Kṣīra* (milk-like sap.) which perfumes the breeze. Its height is the model of the tallness of a person.
Elephants are tied to it.

Devatāḍa
AK 98 69

Dhanaka
MP 118·7

Dhanvana
MP 217·46
Recommended for storing in a fort.

Dhānya (Dhānyaka)
Oryza sativa
Vas II. 45
UV 14
MP 62·9, 217·63, 80
In MP recommended for storing in a fort.

Dhānyāka
MP 217 50
Recommended for storing in a fort.

Dhātakī
Wood fordia floribunda Salisb.
AK 112 125
MP 118·22, 217·76
In MP, recommended for storing in a fort.

Dhātrī
UV 11
It is good for one to plant this tree.

Dhattūra (—Ka)
Datura fastuosa L
AK 100 78

KS VII. 1 24
VII. 2 42
MP 95·24
KS states that one becomes unconscious as a result of eating its fruit.

Dhava
Anogeissus latifolia
AV VI. 5 5 (used for healing up wounds)
UV 10
MP 118·8 161 56

Drākṣā
Vitis vinifera L.
H 161
R IV. 65
AK 108 108
UV 3
Kad 53
MP 96 8, 118·24
Wine is produced from its fruits.

Drukāla
MP 161·62

Dugdhikā
AK 106 100
UV 33

Duḥsparśā
MP 217·72
Recommended for storing in a fort.

Ḍumura
Ficus Cunia Ham.
UV 3

Dūrvā
Cynadon dactylon Pers.
RV x. 16 13 ; 134 5 ; 142·8
Tait. Sam iv. 2 9 2 v. 2 8 3
Vāj. Sam. xii. 20
AB viii. 5 8
SB iv. 5 10·5 viii. 9·2 10·12 etc.
AB 8 37 4
A IV. p. 127
K VII. 7, 14
R VI. 25 , XVII. 12
AK 121·158
MP 93·27, 217·69
Auspicious and used in religious rites. Used in garlands of flowers.
In MP recommended for storing in a fort. In RV. X. 16 3 stated to grow on damp soil.

Durvāra
VP 75 39
Mentioned in connexion with *Śrāddha*.

Elā
AK 112 125
Kad 359
UV 43

Elālatā
Alpinia cardamomum
R IV 47 , VI. 64

Elāparṇī
AK 116 140

Elāvatī
MP 118·9

Elāvālukā
AK 111 121

Eraṇḍa (-Ka)
Ricinus communis L.
Sānkh Āra. xii. 8
AK 93 51
UV 63

MP 217·65

Gairikā

MP 217·77

Gambhārī

(Gambhar—*Gmetina arborea*)

AK 89 36

Gaṇḍa-dūrvā

UV 53

Gandhamūli

Abelomoschas esculentus Man.

AK 119 154

Gandhanākuli

MP 217·72

Recommended for storing in a fort.

Gandhapāṭala

MP 62 24

Gaṇḍīra

AK 120 157

Gaṇikārikā

AK 97 66

Gardabhāṇḍa

AK 91 43

Garmut

Tait. Sam. ii. 4 4 1 2

Kāth Sam xiii

Maitr. Sam. ii. 2·4

Wild bean

Garuḍa-vega

UV 24

Gavedhuka

(V. L. Gavedhukā Gāvidhukā Gavidbuta)

Coix lachryma

Tait. Sam. i. 8·7·1 ; 9·2 v. 4·3, 2

S. B. V. 2·9, 13 , 3, 1, 10 , xiv. 1·2·19

T B. 1.7.3.6

Mai. Sam. ii. 6. 5

iv. 3·8

Vaj Sam. XV. 5

Ghana

UV 187

MP. 217·79

One of the plants which are crushed, mixed with milk and water and sprinkled over a tree struck by thunder.

Recommended in MP for storing in a fort.

Ghaṇṭāpāṭali

AK 90 40

Girikarṇikā

UV 5

KS VII. 2. 37

Girimallikā

Holrrhena antidysenterica Wall,

AK 97 67

Godhūma

Triticum vulgare vill

Mail Sam i. 2·8

Vāj Sam xviii 12

xix. 22, 89

xxi. 29

SB v. 2.1.6 xii. 7.1.2 ; 2.9 ; 9 1 5

Br Up vi. 3 22

TB i. 3 7 2

v.. 80 1

UV 234

VP 8 150

MP 266.12

Goḍumbā
AK 120 157
Gokṣura
AK 105 99
UV 25
Gostanī
UV 155
It is stated to thrive with the dung of cocks, mixed with some other things, applied at its root.
Govalli
MP 217 50
Recommended for storing in a fort.
Granthiparṇa
AK 114 133
Gṛñjana
Vas XIV 33
MS V. 5
YS I. 7 176
AK 118 149
VP 78 12-4
According to VP, it should be avoided in *Śrāddha*.
Guḍuci
AK 101 83
UV 26
MP 217 74
In MP, recommended for storing in a fort.
Guggula (u)
Bulsamodendron mukul
AV XIX. 38 (Amulet for various blessings)
vi. 61 4
vas XI. 66
AK 88 34
H 170
MP 118 21
Gundra
UV 25
Guñjā
AK 105 98
H 420
UV 154
Guñjātaka
MP 118 44, 217·51
Recommended for storing in a fort.
Guvāka (Also Gubāka)
Areca catechu L.
AK 123 169
Hālidhim
UV 13
Hallaka
UV 10
Haṅjikā
MP 217 65
Recommended for storing in a fort.
Hareṇukā
MP 217·73
Recommended for storing in a fort.
Hareṇuemāṃsi
MP 218 11
An antidote against poison.
Haricandana
MP 92·6
Haridrā
Curcuma long L.
AV i 24 2 (remedy against leprous spot)
G I. 23
H 420

Kad 218
UV 9
MP 118 16, 161 57, 217 68
In MP, recommended for storing in a fort.

Haridrava
MP 257·9
Recommended for building purposes.

Haridru
Cedrus libani
SB xiii. 8 1 16

Haridruma
MP 118 5

Harītakī (kā)
Terminalia chebula Retz.
Pan IV 3 167
AK 95 60
UV 9
KS VII. 2 460
MP 217 66
In MP recommended for storing in a fort.

Haritāla
MP 217 64
Recommended for storing in a fort.

Hastikarṇa
UV 25

Hijjala
AK 96 61

Hilamocikā
Enhydra fluctuens Lour
AK 121 158

Himavara
MP 118 19

Hiṅgu
MP 161 62, 217 63
Recommended for storing in a fort.

Hiṅgupatrikā
MP 217 66
Recommended for storing in a fort.

Hintāla
AK 124 170
UV 10
MP 118 21

Hiriveram
UV 13

Hrivera
MP 217 68
Recommended for storing in a fort.

Idhma
AK 82 13

Ikṣu
Saccharum officinarum
R IV. 20
RS V. 1, 16
AK 122 164
H 410
UV 33
KS IV. 1 6
MP 60 8-9 62 28, 118 36 etc.
VP. 49 28-30
In VP, it is recommended for use in *Śrāddha*. In MP (60 8-9) regarded as auspicious. In it it is recommended for storing in a fort. A poor Brahmin traveller, stealing two sugarcanes, does not commit any offence.

Ikṣugandhā
AK 105 99
107 105
108 110
122 163

Ikṣura
AK 107 106

Ikṣvāku
AK 120. 156

Indivara
Nymphoea lotus
R VI 65
RS II 12
UV 10
AK 106 101

Indradru
AK 92 45

Indrāṇikā
AK 98 69

Indrasurasa
AK 98 69

Indravāruṇī
Citrullus colocynthes Shoad
AK 120 157

Indrayava
AK 97 67
MP 118 23

Iṅguda (Iṅgudī)
Terminalia catappa
vi 61 4
MP 118 8

Iṅgudī
Terminalia catappa L
Pan IV 3 164
AK 92 46
UV 33
A I 13 ; II p 73 : IV 3
R XIV 81
MP 274·32
Oil extracted from it fruits, used by hermits for rubbing on their heads, for lamps and as an ointment.

Irāpuṣpa
MP 118·38

Iṣīkā
Polytoca barbata
AV vii 54·4
xii 2 54
SB 1 1 4 19 (mentions a basket of Iṣīkā) iv 3 4 16 etc.
JB Up i 9 ; ii 134
Ch Up v 24·3
Katha Up ii 6 17 etc
Nirukta ix 8
Śāṅkh Āra ii 16 (fold and pin of door made with it)

Jalanīlī
UV 10

Jambaki
UV 3

Jambava
MP 217·58
Recommended for storing in a fort.

Jambīla
(v. l. Jāmbīla)
Citrus aurantium
C *Medica var acida*
Mait Sam III. 15·3
Kāṭh Sam V. 12·1
Vāj Sam XXV. 3

Jambīra
AK 85·24

AK 100·80
UV 8
MP 96 6, 118 23, 255·24

Jambū
(Jambula—*Eugenia jambolana Lamk.*)
Pan IV. 3·165
KS VII 2 31, 33
AK 84 19
Kad 53
UV 8
MP 96·7, 161·61
Haunt of the cuckoo.

Jaṅgida
Terminalia arjuna
AV II. 9
XIX. 34 35 (Used as remedy against all sorts of diseases) XIX. 39 10 (amulet)

Japā
Hibiscus rosa sinensis
MC 32
KS IV. 1·7
AK 99·76
VP 75·34
MP 60·39
UV 17
Its colour is compared with that assumed by clouds at dusk. According to VP, it should be avoided in *Śrāddha*.

Jartila
B III 2 15

Jaṭāmāṃsī
AK 114·134

Jāti
Jasminum grandiflorum L
AK 99 73
KS IV. 1·7
UV 17
MP 118 14 ; 36 , 255 24
According to MP, a house having it is believed to be prosperous and beautiful.

Jātiphala
MP 118·9

Jayā
AK 97 67
MP 217 65
According to MP, recommended for storing in a fort.

Jayantī
AK 97·66

Jīraka
KS IV. 1·6
MP 60·27

Jīvaka
AK 117 143
MP 217 43
In MP recommended for storing in a fort.

Jīvantī
AK 116 142
UV 61
Its bones serve as manure for yielding *Kārpāsa* cotton.

Jīvita
MP 217·74
Recommended for storing in a fort.

Jyotiṣmatī
UV 24

Kacchaka
UV 13
Kacvi
UV 9
Kadali
Musa sapientum
Me 82, 101
K 1·36
R XII. 96
AK 109·113
Kad 63
UV 7
MP 96·6, 118 37, 180 36, 255·24
According to MP, a house having it becomes prosperous and beautiful.
The deer feed on it when it buds. The thigh of a beautiful woman is compared with it.
Kadamba
Neuclea cadamba
K III. 68
Me 25
V IV 61
R XIII. 27 ; XV. 99
RS II. 17, 20, 23, 24; III 13
AK 91·42
H 39
UV 9·
MP 62·24, 95 24, 118·16, 161·56, 64, 180·27, 217 80
In MP it is recommended for storing in a fort.
The flowers bloom at the advent of the rainy season.
Used by women as decoration on their heads, especially in the parting of their hairs
Kaivāruka
KS IV. 1·29
Kākajhvā
MP 217·51
Recommended for storing in a fort
Kākambira
RV VI. 48·17
Kākodumbara (-barikā)
UV 50
MP 217·70
In MP recommended for storing in a fort.
Kākola
MP 217·43
Recommended for storing in a fort.
Kākoli
MP 118 31
Kakubha
Terminalia arjuna
VI. 61·14
Me 22
RS II. 20
UV 53
Kālāguru
Agallochum
R IV. 81 , XIII 55 ; XIV. 12
RS II. 21, IV. 5, V. 5, VI. 13
Elephants are tied to these trees which grow abundantly in Prāgjyotiṣa.

Kalama
Oryza sativa
R IV. 37
K V. 47
Kālamalikā
MP 217 63
Recommended for storing in a fort.
Kalama-śāli
UV 33
Kalambī
AK 121·158
Kālāmra
VP 43 6
Kālaśāka
MP 118 22, 217·50
Recommended for storing in a fort.
Kālayakadruma
MP 118·5
Kalhāra
RS III. 15
UV 10
Kaliṅga
MP 96·5, 118 12
Kāliyaka
RS IV. 5, VI. 12
MP 161·62
Kalpavṛkṣa (or -druma)
VP 45 40
MP 11·44, 92 5, 121 1
Honey is said to be extracted from it.
Kāmā
MP 217 72
Kamala (See Abja)
Nelumbium speciosum Willd.
Me 41, 50, 71, 88
R III. 36 ; IX. 16, 27 , XI. 12 ; XIX. 1. 11.
V II. 12.2 , IV 40. 1 ; 54, 73
A VI. p. 135, VI. p. 215
K V. 21 , VII. 89 , VIII. 19, 85
Mal V 6
RS I. 28, III. 5, 8, 11 ; V. 13 , VI. 32 ; XVII 40
UV. 10
Blooms at sunrise and closes at sunset Abode of goddess Lakṣmī A beautiful woman's face, soft body, beautiful palm or eye are compared with it. Lotuses, especially blue ones, used by women as ear-ornaments.
Kamalinī
UV 49
Kampilla
UV 20
Kanakabhadra
MP 83. 20
Kāñcana
Bauhinia acuminata L.
UV 40
One of the trees which should not be planted in the residential house.
Kāṇḍaka
MP. 118 31
Kandalī (Kandala)
Me 21
V IV. 15
R XIII. 29
RS II. 5.

MP 118 31

Kaṇḍurā
MP 217 66
Recommended for storing in a fort.

Kaṅkola (—Ka)
MP 96. 7, 118. 25, 217. 80
Recommended for storing in a fort.

Kaṅkeli
RS III. 18

Kaṇṭakāra (ı) or Kaṇṭakiri, Kaṇṭakārikā
Solanum xanthocerpus Sd
Pan IV. 3. 152
AK 104. 94
UV 22
MP 217. 44
In MP, recommended for storing in a fort.

Kaṇṭakī
UV 8

Kāṇṭhāl
UV 13

Kapittha (Ka)
Feronia elephantum
AV. iv. 4.8 (used for virility)
AK 85. 21
KS II. 1. 29
VP 75. 75-6
MP 96.5, 118 6, 217 5, 218.5
UV 33
According to VP it is a taboo in *Śrāddha*. According to MP, recommended for storing in a fort and it is an antidote against poison.

Kapitthaua
UV 13

Karakṛṣṇā
MP 217. 74
Recommended for storing in a fort.

Karamarda (Ka)
Corissa carandus L
UV 43
MP. 96. 7, 118, 24, 217. 55
Recommended for storing in a fort.

Karañja
Pangamia glabra Vent
Vi. 61. 14
Ap I. 17. 27
UV. 21
Prohibited as food

Karañjaka
AK 92. 48

Karañjphala
UV 220
Stated to yield abundant fruits when sprinkled over with the blood and fat of boars, etc.

Kāraskara
Pan. VI. 1.156

Karaṭa
MP 118. 44

Karavallī
UV 63

Karabilva
UV 8

Karavī
AK 119. 112, 153
MP 217. 63
According to MP,

recommended for storing in a fort.

Karavīra (—Ka)
UV 48
AK 99. 77
MP 60. 38, 75. 3, 118. 19, 21 etc.

Karcūra
AK 120 155

Karcūraka
AK. 115. 135

Karīra
Capparis aphylla=C. decidua
Tait Sam ii. 4. 9. 2
Kāṭh. Sam. xi. 11 ; xxxvi. 7
SB. iii. 5. 2. 11
UV 23
Pan. IV. 3. 141
MP. 96. 7, 217. 80
Recommended for storing in a fort.

Karkandhu
Zizyphus nummularia
Z. quenoplia
Z jujuba
RV i. 112. 6
Kāṭh. Sam. xii. 10
Mait. Sam iii. 11. 2
Vāj. Sam xix. 23. 91
xxi. 32
xxiv. 2
SB. V. 5. 4, 10
xii. 7. 2. 9 ; 9. 1. 5 etc.
JB. ii. 152, 5 (had red berry)
AK 89. 37
Pan V. 2.24
UV 42
MP 217 55
In MP, recommended for storing in a fort.

Karkaṭī
AK 120. 156.
UV 8
MP. 187 33
According to MP, it is auspicious as a gift by ladies.

Karkoṭaki
MP. 118 28

Kāṛśmārya
Gmelina arborea
Tait. Sam. v. 2.7, 3.4 ; vi. 2.1, 5
Mait. Sam. iii. 2.6 ; 7.9
SB iii. 4.1.6 ; 8.2.17 ; iv. 3.3.6 ; vii. 4.1 37

Karṇikāra
Pterospermum acdri-folium.
V II. 22 ; III. 3.
K III. 28, 5, 3, 62.
RS VI. 5, 20, 27.
UV 42
AK 96.61
MP 118.3, 180.25
Rich in golden colour, but devoid of fragrance. Used by women to decorate their hair.

Kārpāsī (-sa)
Gyossipum hertaceum L.
AK 110. 116
MP. 118.36, 217.77
In MP. recommended for storing in a fort.

Kāṛśya
Pan VIII. 4. 5.

Kārūṣa (Karuṣa, Karūṣaka)
VP 8.152
MP 217.55, 58
In MP, recommended for storing in a fort.

Kāśa
Saccharum spontaneum L.
RV X. 100.10
Tait. Ara. vi. 9. 1
Pan IV 2. 80. VI. 2. 82.
UV 25
VP 75 41
MP 61.50, 118.35. 154.300 etc.
K VII. 11.
RIV 17.
RS III. 1. 2, 26.
AK 122.163
Its flowers are very white. According to VP., it is good for *Śrāddha*.

Kāsamarda (-I)
MP 118-24, 31

Kāsārī
MP 217 79
Recommended for storing in a fort.

Kaseru (-kā)
Scirpus grossus Lf
KS VIII. 1 39, 43.
MP 217.52
In MP. recommended for storing in a fort.

Kāśmarī (-ra)
VP 75.2
MP 96.6, 271.47
The use of a vessel, made of its wood, leads to the destruction of demons.

Kāśmīrī
MP 118·8, 217.52
Recommended for storing in a fort.

Kāsmaryaphala
MP 96.6

Katakaphala
UV 27

Kaṭaphala
AK 90.41
MP 118.9, 17 ; 217.49, 76
In MP. recommended for storing in a fort.

Katambhara
AK 119. 153

Kattṛṇa
Pan VI. 3. 103.

Kaṭu (-ka)
AK 102. 86.
MP 217.46
In MP, recommended for storing in a fort.

Kaṭukarohiṇī
UV 13

Kavaka (Same as Chatrāka)
MS V. 5.
VS I. 7.171, 176.

Kavijjaka
KS VIII. 2. 37

Kāyasthā
MP 217·64
Recommended for storing in a fort.

Kesara (See Bakula)
K II 55 ; IV. 8 ; VIII. 76.

Me 86.
A 1 p. 30 ; IV. p. 127.
R IX. 36, 40.
RS II. 20.
AK. 96.64
UV 3
MP. 57.16, 118.12, 24 ; 217.52
Women used girdles of the flowers of this tree. Blossoms when spat upon by women. In MP., recommended for storing in a fort.

Kesarī
AK 134. 170

Ketaka (Ketakī)
Pandanus Odoratissimus
K VIII. 58
Me 23
R IV. 55, VI. 17.
Mal. IV. p. 74
RS. II. 17, 20, 23, 26
H 450
UV 3
MP. 57, 16, 81.28, 118.12, 255.24
Pollens of this flower are carried by the wind. According to MP ; a house having it attains prosperity and beauty.

Khadira
Areca catechu Wild
RV. iii. 53.19
AV. iii. 6.1 ; V. 5.5 ; viii. 8.3 ; x. 6.6
Mait. Sam. iii. 9-3
Tait. Sam. iii. 5.7.1 (Sacrificial ladle made of it)
AB. ii. 1
SB. i. 3.3, 20 ; iii. 6.2, 12 ; iv 9.2 (stated to be of great strength)
Śāṅkh. Āra. xii. 8
vi. 61.14
Pan. VIII. 4.5
AK 93. 50
AK 116. 142
KS. VII 1. 31
UV. 7
VP. 74. 9
MP. 69.29, 93.27, 217.80
According to VP ; its sticks are used in *Śrāddha*. In MP recommended for storing in a fort.

Khalakula
Dolichos biflorus
Br. Up. vi. 3.22

Khalva
Phaseolus radiatus
Cicer arictinum
Vigra catjang
AV. ii. 1 ; v. 23.8
Vāj. Sam. xviii. 12 (According to Mahīdhara, Canaka or chicken pea)
Br. Up. vi. 3.32 (According to Sāyaṇa, Niṣpāva)

Kharjūra
Phoenix sylvestus
Tait. Sam. ii. 4.9.2
Kāth. Sam. xi. 10 xxxvi. 7
VP. 65.75-84
MP. 118.8, 161.62

R IV. 57
AK 124.170
UV 8
Grows on seaside.

Kharjūrayaṣṭikā
MP. 217 46
Recommended for storing in a fort.

Kīcaka
Bambusa arundinacea Willd
Me 58
K I. 8
R II. 12, IV. 73
AK 122.162
MP. 118.35
Produces a charming sound as the wind enters into it.

Kiṃśuka (Same as Palāśa)
(Also called Parṇa)
V. 97.5 (Parṇa)
RV. (X. 85 20 (used in wedding); bridal car decorated with it)
AV. iii. 5.4.8 (amulets and cover of sacrificial dish)
V 5 5
XVI. 11.4.53
Tait. Sam. iii. 5.7 2 (Sacrificial implements made with its wood)
Mait. Sam. iv. 1.1
PB. xxi. 4.13
Kāth. Sam. xv. 2 ; viii. 2
Tait Br. i. 1.3.11 ; 7.1.9 ; 8.7 iii. 7.4, 2, 18 etc.
Kaus. Br x. 2
SB. i. 3.3.19 ; i. 5.4.5 ; ii. 6.2.8 ; v. 2.1.17 etc.
AB. ii. 1
R IX. 31
RS. VI. 19, 20, 28
AK 87 29
UV 68
MP. 118 9, 217.78
Stated to be terrifying (*bhīṣaṇa*).

Kiṃhī
MP. 217.63
Recommended for storing in a fort.

Kiñjalka
MP. 154 230

Kiṃkirāta
MP. 118.12

Kirāta
MP. 118.12, 217.69
Recommended for storing in a fort.

Kiyambu
(V. L. Kyāmbu)
RV. x. 16.13 = A.V xviii. 3.6 (Planted in the place where dead bodies are burnt)
Taitt. Āra. vi. 4.1, 2 (Kyāmbu)

Kodrava
UV 33

Kokanada
K XVII. 16
UV 10

Kokilākṣa
Hygrophila spinosa T.
KS. VII. 2.34

Kolaka
MP. 217 56

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Recommended for storing in a fort.

Kośataka
UV 92

Kośi
UV 11

Kovidāra
Vi 61.4
RS. III. 6
AK. 85.22
UV 20
MP. 118.7, 9

Kramuka
AK 123.169

Kṛṣṇala
Abrus precatorius
Kāṭh. Sam. xi. 4
Taitt. Br. i. 3.6, 7
Seeds used as standard weights for currency.
AK 91.42

Kṛtamālaka
MP. 217.68
Recommended for storing in a fort.

Kṣīra
UV 7

Kṣīrakākoli
KS. VII. 1.39

Kṣīrakaśāka
MP. 118.32

Kṣīrika (-druma)
UV 20
MP 118.22
One of the trees by planting which one is supposed to ensure happiness for seven births.

Kuberaka
MP. 118 40, 217.62
Recommended for storing in a fort.

Kuberākṣi
Caesalpinia bonducella Flem.
AK 94.55

Kubjaka
KS IV. 1.7
MP. 60.38, 81.28 etc

Kula
UV 25.

Kulattha (Kulatthaka)
UV 28.
VP 8.151

Kulikāṅgākṣi
MP 217.51
Recommended for storing in a fort.

Kulmāṣa
Phaseolus mungo
Ch. Up. i. 10.27
Nirukta, i. 4

Kumbhakari
UV 43.

Kumbhikā
MP 217 78
Recommended for storing in a fort.

Kuṃkuma
Crocus sativus
UV 49.
R IV. 67
RS V 4, 9, 12
Kad 219
H 368
MP 60.38, 81.28, 118.38, 154.230, 217.65.

It grows on the bank of the Indus. In MP recommended for storing in a fort.

Kumuda

Nymphoea esculenta.

AV IV 34.5

Pan. IV. 2.10, 87

Me 42, 60.

V III. 16.

A V 28.

K VII. 74 ; VIII. 70.

R IV. 19 ; VI. 86 ; XVI. 76, 81, 86 ; XVII. 6, 75 ; XVIII. 3, XIX. 34.

RS III. 2, 15, 21, 23, 26.

Kad 155

UV 10

Extremely white objects are compared with it. Blooms at night.

Kumudvatī (See Kumuda)

A III. 14 ; IV. 2, IV. p. 122.

R VI. 36 ; XVI 85 ; XVII. 1.

Kuṭaṅkā

MP. 217.63

Recommended for storing in a fort.

Kunda

Jasminum multiflorum or pubescens.

Me 49, 71, 118.

V II 4.

AV 19

Mal. III 8.

RS IV. 2, VI. 23, 31.

K XVII. 27.

AK 99 73

UV 3

MP 62.23, 118.11, 161.63

Used by women for decorating their hair.

Kuraṇḍaka

VP 75.34

Its flowers are tabooed in *Śrāddha.*

Kuraṇṭaka

UV 17.

Kuraṇṭhaka

AK 99.74

Kurabaka

Barleria cristata

Me. 71, 86

V II. 7.

A VI. 4.

R IX. 29.

Mal III p. 37, V. 4, 5, 9.

RS III 10, VI. 18, 33.

AK 99 74

MP 118.19

Used by women to decorate the top-knot of their hair, Blooms in spring.

Kuraṇṭa (-ka)

KS IV. 1. 7.

MP. 62.23, 161.63

Kuruvaka

UV 27.

Kuruvinda

AK 121. 160.

Kuśa

Eragosis cynosuroides

SB. ii. 5.2. 15 ; iii. 1.2. 16 ; iii. 6.2. 9 v. 3.2. 7 etc.

Mait. Sam. iv. 5.7

Taitt. Br. 1.5. 10 ; 1.2. 7

B I. 6. 3, I. 14. 11, II. 6. 31, IV. 513.
Vas XXVII. 12.
IV 1 42.
Pan. V. 3. 105.
V 2 63.
A III. p. 84.
R I. 95, V. 4, 7; VIII 18; XIII. 43; XIV. 28; XIX. 2.
AK 123. 166
Kad 125
UV 25
MP 93 27, 118.36
Used at sacrificial rites.

Kuśara
Saccharum officinarum
RV. i. 191.3

Kuśeśaya (See Abja)
A IV. p. 136.
R VI. 18.
MP 118.15

Kūṣmāṇḍa (-Ka)
Benincasa cerifera Savi
AK 120. 156
KS IV. 1. 29
UV 8
MP 96. 5, 118. 27

Kuṣṭha
Costus speciosus C. arabicus Saussarea auriculata
AV. v 4; 1 V. 4. 10 (cures headache, optical disease, bodily affection), vi. 102. 3
vi 102, xix. 39, 1; 39 9 (Cures fever and consumption)
AK 112. 126
KS VII. 1. 4, VII. 2. 4
UV 163
MP 217. 63, 218. 9
One of the plants whose leaves have to be crushed, mixed with water and sprinkled over a flower plant to ensure fragrance.

Kusumāmśuka
MP 118. 9

Kusumbha
Carthamus tinctorius L.
RS I. 24, VI. 4
H 285
Kad 218
UV 33
MP 60.9, 39 etc.
Wrightia is anti dysente-rica.. Holarrhena antidysenterica
Pan. V. 1. 50
Me 4
R XIX 37
RS III. 13
AK 97 67
UV. 33
KS VII. 2. 19, 37
MP 96. 7, 118. 16, 161 63

Kuṭannaṭa
AK 114. 132

Kūṭaphala
MP. 96. 10

Kuvala
Pan V. 2. 24

Kuvalaya (Kubalaya)
Me 46, 100
Mal IV. 10

RS II. 22
UV 10
Used by women as ear-decoration. A beautiful woman's eyes are likened to it.

Kyāku
G XVII. 30
Vas XIV. 33

Lākṣā
Kad 92

Lakṣmaṇā
A plant having leaves with red spots.
AV ii. 25. 3 (Used against abortion)
MP. 266. 14

Lakta
MP 161. 63

Lakuca
UV 10
MP 118.15, 161.61, 217.55
Stated to belong to the *amla* group, and recommended for storing in a fort

Lasuna
G XVII. 30
Vas XIV. 33
KS IV. 1. 29
MS. V 5
YS I. 7. 176
AK 118. 149
UV 12
MP 217. 64
In MP recommended for storing in a fort.

Lâva
VP 75. 51
MP 118. 53
Lava grass is tabooed in *Śrāddha.*

Lavali
Cicca acida
V. V 8

Lavaṅga
Eugenia caryophyllaca Wight
K VIII. 25
R VI. 57
MP 118. 25
Southern breeze, carrying their filaments, is enjoyed by people.

Loca
MP 118.15

Lodhra
Symplocos racemosa
MC. 71
K VII. 9. 17
R II—29 ; III. 2
RS IV. I, VI. 33
AK 88 33
MP 118. 22, 161. 61
Its pollens are used by women as a cosmetic, especially as face-powder.

Lodhrapuṣpini
MP 217. 3

Lohapṛṣṭha
MP 118 52

Lomaka
MP 217. 77
Recommended for storing in a fort.

Madārati
Intoxicating plant (creeper)
AV, vi. 16. 2

Madayantikā
UV 25
KS. VII. 2. 37

Mādhavī
Gaerthera racemosa
Me. 86
V II. 4
A III. p. 93 , VI. p. p. 199, 200
AK. 98. 72
UV 48
Pleasure-bowers are made of *Mādhavī* creepers.

Madhūcchiṣṭa
MP. 217. 78
Recommended for storing in a fort.

Madhuga (Madhugha)
Honey plant, sweet herb
RV. vi. 70. 1 5 (Madhu-dugha)
AV. i. 34. 4 ; vi. 122 3

Madhūka
Madhuka latifolia
AV i. 34. 5
A love-spell recited with this plant. An intoxicating drink is made from its flowers.
K VII. 14
R VI 25
MP 161. 65, 187. 32 217. 49, 218. 15, 257. 8
AK. 86. 27, 108. 110
UV. 21
In MP. recommended for storing in a fort. Also recommended for building purposes and use in ritual. Garlands of these flowers were used by women for decorating their hair.

Madhūlikā
MP 217. 48
Recommended for storing in a fort.

Madhupargu
MP. 217 45
Recommended for storing in a fort.

Madhuvallikā
MP 217. 50
Recommended for storing in a fort.

Madhuyaṣṭi (Kā)
See Yaṣṭimadhu

Maduka
KS VII. 1. 39

Māgadhī
AK 105. 97

Mahākṣīrā (V. I. Mahādrākṣā, Mahākṣudra)
MP. 217 45
Recommended for storing in a fort.

Mahānimba
MP. 118 5

Mahātapas
MP 217. 45
Recommended for storing in a fort.

Mahādantaśatha
MP. 218. 5
An antidote against poison.

Mākanda
AK 88 34

Makūlaka
AK 117. 144

Malapū
AK. 96. 62

Mālatī
Aganosma caryophyllata G
Vi. 61. 15
MP 60.39, 62.24, 70.4, 95.24, 217 56, 74
Me. 103
RS. II. 24, III. 2, 19
AK. 99. 73
Fragrant *Mālatī* flowers open towards the evening. According to MP, it is used in rituals. Recommended for storing in a fort.

Malaya-druma (See Candana)
R XI. 32.

Mallikā
Jasminum Zambac
R XVI. 47, 50.
AK 98. 70.
MP 60.38, 62.24, 161.61, 255.24
UV 8.
KS IV 1. 7.
Blooms in the evening. According to MP, the house having it becomes prosperous and beautiful. It is recommended for use in rituals.

Mālūra
AK 88 32.

Māṃsī
MP 217.71
Recommended for storing in a fort.

Mañjiṣṭhā
Rubia tinctorium L.
AB iii. 2. 4
Śāṅkh. Br. vii. 7
AK 103. 91
H 313
Kad 81.
MP 217.72, 218 6
UV 199
One of the substances which, if applied to a *Kārpāsa* tree, results in luxuriant yield. In MP. recommended for storing in a fort. It is stated as an antidote against poison.

Maṇḍāra
Erythrina indica Lamk.
MP 60.34, 62 24 etc. 118.9, 154.381, 161.62
UV 219.
The hole of this tree being smeared with earth, cowdung and ghee, the creeper of pumpkin-gourd yields good fruit. In MP. recommended for use in rituals.

Maricа
Vas I 20. 12.
KS VII. 1. 24.
R IV. 46
MP 118 26
Trade in it is prohibited presumably for Brāhmaṇas.

Marika
MP. 118.26, 217 62
Recommended for storing in a fort.
Maruvaka
AK 94. 53.
AK. 100. 79.
UV 25.
Māṣa
Ap. 2. 16. 22.
vi. 80. 1.
Vp. 8. 151
Fit for use in *Śrāddha*.
Māṣaparṇī
Teramnus labialis
AV ii. 25.3
MP 217 44
AK 116. 139
In MP recommended for storing in a fort.
Māṣaparṇa
UV 54.
Māṣiṇa
H 375.
Maskara
Pan VI. 1. 154.
Masūra
Lens esculenta
Vāj Saṃ. XVIII. 12
Br. Up. vi. 322
VI. 79. 18.
Vp. 8. 151.
Masūsya
A grain of the northern region.
Taitt. Br. iii. 8 14. 6
Mātāmra
MP 118.6
Mātuluṅga (ka) Also Mātuliṅga.
MP 96.6
AK 100. 79
UV 68.
One of the trees which are terrifying (*bhīṣida*). In MP. recommended for use in rituals.
Meda
MP 217.44
Recommended for storing in a fort.
Methikā
UV 153.
The water, in which it is soaked along with some other substances, is stated to make trees like *Kadamba* produce fragrant flowers in abundance
Moca (Ka, Mocākhya)
vi 61.5
MP 217 76
AK 87.31
Recommended for storing in a fort.
Mokṣaka
UV 26
Moraṭa
KS VII. 1 38
Mṛdvika (Kā)
MP 118.26, 217.46
UV 11
In MP. recommended for storing in a fort.
Mṛdvī
UV 40

One of the trees growing in marshy lands.

Mṛṇāla
Lotus-stalk
V III. 13
A III. p. 84; VI. 18
K I. 40, III. 49; V. 29, VI. 68
R XVI. 7, 16
RS I. 19
A woman's soft body is compared with it. Lotus fibres were worn as garlands by women between their breasts.

Mṛtasañjīvanī
MP 122.56

Mucukunda
MP 118.11

Mudga
Phaseolus mungo L.
Vi 80.1
Vp 8.151
MP 96.11
UV 28
In MP. recommended in rituals.

Mudgaparṇī
MP 217.43
AK 109.114
Recommended for storing in a fort.

Mukta
UV 33

Mukunda
vi 79.17

Mūla(ka)
Raphanus sativus L.
MP 96.7, 217 63, 77
AK 121.158
KS IV. 1.29
In MP recommended for storing in a fort.

Muñja (ka)
Pan. III. 1 117
Ap I. 2.33, 35
I. 21.1
B I. 3.14
V XI. 58
MP 118.4
Trade in it is allowed Girdles, made of it, are prescribed for Brāhmaṇa Brahmacārins
A (1. 2. 35) prescribes a girdle of *Muñja* for a Kṣatriya as an alternative to the bow-string.

Murā
AK III. 123
UV 57

Mūrvā
MP 218 4
AK 101 84
UV 24
In MP it is mentioned as an antidote against poison.

Muṣākarṇī
UV 10

Mūṣikaparṇī
AK 102.88

Mustā
Cyperus rotundus.
A II P 65
R IX. 59; XV. 19

RS I.17
MP 217.68
AK 121.160
UV 27
Boars feed on it. Grows in pools. In MP recommended for storing in a fort.

Naḍa
Phragmitis maxima
RV i. 32.8; 179 9; ii. 34.3, viii. 69.2; x. 11 2; 105.9
Nirukta, V. 2
From RV i. 32.8 it seems to have been a reed with splits of which boats were made.
From RV ii. 34.3 it appears to denote reed with which whips were made.
Pan IV. 2.87
AK 122.163

Nāgabalā
AK 110.117

Nāgakesara
Mesua ferra L.
MP 118.24
AK 97.65
KS VII. 1.8, 32

Nāgakusuma
UV 33

Nāgara
MP 217 62
Recommended for storing in a fort.

Nāgaraka
MP 217.57
Recommended for storing in a fort.

Nāgavallī
MP 118 25

Naiyagrodha
MP 69.29
Recommended for ritual purposes.

Nakha
AK 113 131

Naktamāla
Pongamia glabra
R.V. 42
MP 217.68
AK 92.48
UV 10
Grows abundantly on the banks of the river Narmadā. In MP recommended for storing in a fort.

Nala
B I. 14. 11.

Nalada (Naladī)
Nardostachys jatamansi
AV VI. 102. 3
Ait. Āra. iii. 24
Sāṅkh. Āra. XI. 4
MP 217.68
Recommended for storing in a fort. Appears to have been used for garlands.

Nali
AK 113 130.

Nalikā
UV 25.

Nālikera (Also Nārikela)
Cocos nucifera.
A IV. p. 127.

R IV. 42.
MP 96.8, 118.8, 161.62, 255 24
AK 123 169
UV 3
Its water is relished as a drink. According to MP, a house having it becomes prosperous and beautiful. Its use is recommended for ritual purposes.

Nalina
MP 161.52

Nalinī
Lotus.
RS III. 10.
K IV. 6.
A III. p. p. 84, 89, 100, 106, 108, 141.
V p 173.
Me 41.
Its leaves are used as fans.

Nameru
Elaeocarpus ganitrus.
K I. 55, III. 43.
R IV. 74.
Its flowers are used as decoration, especially of the head. This tree affords pleasant shade.

Nandikāvarta
UV 33.

Nandyāvarta
KS IV. 1. 7.

Narāci
A poisonous plant.
AV. V. 31.4

Navamālikā (Navamallikā)
Jasminus sambac.
A I, p. p. 26, 31, 33 ; II. p. 70, IV. p. 121, verse 12; V. p. 173.
R IX. 42.
RS III. 18, VI. 5.
K XVII. 28
KS IV. 1 7.
MP 118 26
AK 99 73
UV 27
A delicate woman is compared with its flower. The creeper entwines the mango-tree. Pleasure-bowers made with *Navamālikā* creepers.

Nicula
Me 14.
V IV. 13.
MP 180 31
AK 96. 61

Nigrodha
UV 13.

Nikoṭaka
MP 118 12

Nili
AK 104. 95.
H 57.
UV 31
One of the trees by planting which in the house a house-holder brings ruin to himself and his family.

Nīlākalaśālā (Nīlāgalaśālā)
Grain creeper.
AV vi. 16.4

Nīlotpala
Blue lotus
Nymphaea stellata Willd.
K I. 46.
RS II. 2, III. 17, 19, 26; IV 9.
UV 88
A beautiful woman's eyes are compared with it.

Nimba
Melia azadirachta L.
VI 61. 14
MP 118.5, 161.66, 257 7
AK 86. 26
AK 96. 63
UV 3
In MP its use is prohibited for building purposes.

Nīpa (See Kadamba)
Pan IV 3 152
R XIX. 37
Me 21. 71
V IV. 42. 2
RS. II 17, III. 13
KS. VII. 2. 33
MP. 118 17, 161 56, 60, 217 53, 257.7
AK. 91. 42
UV 25
In MP it is recommended for storing in a fort.

Nirguṇḍi
Vitex negundo L.
VI 61. 3
MP. 118 5
UV 19
UV 99

Niśā
UV 198

Nispāva (Also see Khalva)
VP 8. 151
MP 62.28, 96.11
In MP. recommended for ritual purposes.

Nivāra
A variety of paddy; wild rice.
Kāṭh. Sam. xu. 4
Mait. Sam. ii. 4. 10
Vāj Sam. xviii. 12
SR V 1. 4 14. 3. 3. 5
T. R I 3. 6. 7 etc.
A I. 13 , IV. p. 128, verse 20
RV 9, 15 ; XVI 28
MP 118.45, 266.16 etc.
Used by hermits on auspicious occasions.
In MP it is recommended for ritual purposes.

Nyagrodha
Ficus bengalensis
RV i-24. 7
AV iv. 37.4, v. 5.5
A B. VII. 30, 31
SB v. 3. 5.13 ; viii. 2. 7. 3
Ch. Up. vi. 12.1
Taitt. Sam. vii. 4. 12. 1
Vāj Sam. xxiii. 13
A. B. 7. 35. 5
S B. 13 2 7 3
Pan VII 3 5
AP I. 2. 38
V XL 53
AK. 88 32
UV. 6
VP 35 40-2, 69.150, 72 8-9, 45.3-5

MP 118.3, 217.78
The staff of a Kṣatriya Brahmacārin is made of the wood of this tree. According to VP., it symbolises prosperity. In MP it is recommended for storing in a fort. Remarkable for sending down roots from its branches

Nyastikā
Andropogan aciculatus
AV vi. 139.1

Oṣadhi
A. B. 8. 37. 4
B II. 8. 4, III. 2. 9, 11, 12
UV 11

Padma
Lotus.
Vas XXVII. 12
Vp 41. 14-6
Me 70
K. I. 16, 43, V. 19, 27; VII. 16, 38; VIII. 23, 30
R. III. 17. VI. 26, 36, 86; IX. 80, X. 8, 62, XIII. 51; XVI. 16, 46, 68; XVII. 75
RS. II. 14, III. 1, 15, IV. 1, 14; VI. 2
K. XI. 25, 46
KS VII. 1. 8; VII. 2. 35
H 18
Kad 150
UV 10

Padmacāriṇī
AK 117. 146

Padmaka
MP 118.6, 217.79, 257.11
Recommended for storing in a fort. It is auspicious for building purposes when used alone.

Padminī
Lotus.
Me 84
V I. 5
K. III. 76
Mad II. 12

Pākadūrvā
Edible millet.
RV X. 16.3 (Said to grow on spots where dead bodies are burnt)
Taitt. Āra. vi. 4. 1. 2
AV xviii. 3.6 (Reads *Sāṇḍadūvā*, having egg-shaped roots.

Palāṇḍu
Onion.
Ap I. 17. 26
V XIV. 33
MS V. 5
KS IV. 1. 29
AK 118. 148
YS I. 7. 176
UV 12

Pālaṅkī
AK 111. 122
KS IV. 1. 29

Palāśa (Same as Kiṃśuka)
Butea frondosa.
S. B. 1. 1. 1. 4, 13. 8. 4. 1
Pan IV. 3. 141
K III. 29

AP I 2. 38
G 1. 24, IX. 46
Vas XI. 52, XXVII. 12
VI 61 15
AK 87.29, 120.155
UV 3
VP 37 18-9, 62 191, 75.1
MP 93 27, 143, 265.31 etc.
The staff of a Brāhmaṇa Brahmacārin is made with the wood of this tree. According to VP it symbolises the lustre of a Brāhmaṇa. In MP it is recommended for ritual purposes.

Pāhvata
UV 13

Pāli
MP 118 8

Panasa
Artocarpus integrifolia L.
AK 96.61
VP 43.4
MP 96.5, 118.7, 161.60, 180.38, 255.24, 257 11
UV 7
In MP it is recommended for ritual purposes. The house having it is supposed to be prosperous and beautiful. Auspicious for building purposes when used alone.

Pāṇḍuka
UV 33

Paṅkaja (See Abja)
Lotus.

K V. 9, XIII. 39
A V. 28 , VII. 16
R III. 8 ; VII. 64 , VIII. 55 ; XIII. 54 , XV. 52 ; XVIII 20 , XIX. 8
RS III 10, 23 ; V 5
UV 33

Parārika
AP I. 17 26
Prohibited as food.

Pārābata
MP 217 57
UV 70
Stated to be conducive to welfare if planted to the south of the house. In MP recommended for keeping in a fort.

Pāribhadra (Ka)
VI 61 5
MP 118.16, 277.8
AK 86. 26
AK 94.53
In MP recommended for ritual purposes.

Pārijāta (Ka)
UV 7
VP 39. 11 ff.
MP 92.5, 118.25, 161.61
In MP it is recommended for ritual purposes.

Parṇpelava
MP 217.71
Recommended for storing in a fort.

Parkaṭī
AK 88.32

Parṇa (Same as Kiṃśuka)

Parṇāśa
MP 118.10
Parpata
MP 217 71
Parūṣaka
UV 22
VP 38.63 ff
MP 118.11
Parvata (?)
MP 217 51
Recommended for storing in a fort.
Pāṣāṇabheda
Kad 369
Pāṭā (Pāṭhā)
Stephania elegans. S glabra S. hernandifolia.
AV ii. 27.4
Kaus Sūtra, xxxvii. 1, xxxviii 18
Pāṭa.a
Bignonia suaveolens stereospermum suaveolens
A I 3
R XVI. 52 ; XIX. 46
RS I. 28
Vp 78.9
Stated to be fragrant.
Pāṭalā
MP 95.24, 118 19, 154.309, 161 57, 218.2, 255.24
AK 84.20
In MP it is stated to be an antidote against poison. A house having it is supposed to be prosperous and beautiful. Recommended for ritual purposes.
Pāṭatapatra
MP 217.77
Recommended for storing in a fort.
Paṭola
Trichosanthes dioica Roxb.
AK 120.155
Vp 78.9
UV 217
Its seed, if sown after being mixed with animal fat, and sprinkled over with water after being sown, yields fruit without stones within. Mentioned in VP in connexion with *Śrāddha.*
Paṭolaka
MP 96.11
Recommended for ritual purposes.
Paṭolakaṭukā
MP 217 69
Recommended for storing in a fort.
Paṭolikāra
MP 118.28
Pāṭali
Pan IV. 3.136
AK 94.55
UV 3
Pataṅgī
MP 217 71
Recommended for storing in a fort.
Pāṭhā
AK 102. 85
Pāṭhī
AK 100. 80

Paunḍarya
AK 113. 128
Phalinī
R VIII. 61
Phaṇijjhaka
MP. 217.64
Recommended for storing in a fort.
Phaṇita
MP 217.47
Recommended for storing in a fort.
Picula
AK 90. 40
Picumanda
MP. 187 31
AK 96. 63
UV 3
In MP recommended in rituals.
Pīlā
A fragrant plant.
AV IV. 37 3
Pīlu
Careya arbarea. Salvadora persica. S. Oileoides.
AV XX. 135 12 (Doves feed on its fruits).
G I 25
VI 61. 4
Pan V. 2. 24
VI 3. 121
MP 118 22, 217.79
AK 86. 28
UV 22
In MP recommended for storing in a fort.
Piṇḍa Kharjūra (See Kharjūra)
A II p. 71
Piṇḍāra
MP 96.9
Mentioned as a gift in rituals.
Piṇḍūra (Piṇḍ.ra)
UV 22
Pippala
Ficus religiosa L.
MP 93.27, 217.49, 255.20
AK 84.20
UV 36
In MP recommended for storing in a fort and use in rituals. Believed to be auspicious if it grows to the west of the house.
Pippalī (-mūla)
Piper peepuloides. P. longium.
AV VI 107.4
AP I. 20. 12
VI 61 6, 79. 17
KS VII. 1. 24 45
MP 118.25, 217 62 255.23
UV 8
AK 105.97
Trade in it is prohibited. In MP recommended for storing in a fort.
Piṭala
KS VII. 1. 38.
Pītanaka
AK 86. 27
pitndāru
Pinus longifolia
Kāṭh. Sam. XXV. 6

SB. iii. 5. 2. 15 , 4. 4. 5. 17
P Br. XXIV. 5
Mahīdhara on Vāj. Sam. V. 14. Sāyaṇa on AB. i. 28
Pitaśāla (—sāra)
UV 199

Piyāla
Buchanania latifolia
K III 31
UV 20
One of the trees which, if grown in a house, becomes conducive to welfare.

Piyūkṣā
Pan VIII. 4. 5

Plakṣa
Ficus lacor
AB 7. 35. 6
Pan IV. 3. 164
VIII. 4. 5
R VIII. 93; XIII. 71; XVOO. 12
MP 8. 8, 217. 79, 255. 21
VP 75. 1
AK 88. 32, 91. 44
UV 3
Its bark is used in religious rites. According to VP it symbolises the lordship of the world. In MP recommmended for storing in a fort. Believed to be auspicious if it grows to the north of the house. It appears to have been a wave-leaved fig tree with small white fruit.

Poṭagala
AK 122 163

Prācīnāruka
MP 217·57
In MP recommended for keeping in a fort.

Prakṣa
Ficus lacor
Sāmaveda i. 144; ii. 465
AV V. 5 VI. 3. 10·1
Taitt. Sam. vii. 4. 12
Mait. Sam iii. 10.2, vi. 3 10 2
AB vii 32; viii. 16
Taitt. Br. iii. 8. 19. 2
SB iii. 8. 3. 10, 12 etc.
Ait. Āra. V 2. 2
Is it the same as Plakṣa? *R* and *L* sometimes used promiscuously.

Pramaṇḍa
RV iii. 53. 14

Pramaṇḍanī
A sweet-scented plant.
Kaus. Sūtra, viii. 17, xxv. 11, xxxii. 22

Praprotha
A substitute of *Soma*.
P. Br. viii 4.1

Prapunnāḍa
AK 118. 147

Prasthapuṣpa
MP 161. 56

Pratibimba
MP 1.8·20

Priyaka
MP 217 80

Recommended for storing in a fort.

Priyakāñcana

MP 274·32

Used for constructing pillars in the *Tulāpuruṣa-mahādāna*.

Priyāla (Ka)

MP 118 8, 40 ; 217.79

AK 89 35

In MP recommended for storing in a fort.

Priyaṅgu

(1) *Setaria italica*

Taitt. Sam. ii. 2. 11-4

Kāṭh. Sam. x. 11

Mait. Sam. ii 1 8

Vaj. Sam. xviii. 12

G XVII. 3

VI 80. 1

Mal III. p. 45

RS IV. 10, VI. 12

AK 94. 56

UV 7

KS VII. 1. 32

MP 161.57, 180 24, 39 ; 217.76, 218.6, 267.16

VP 8. 151

Puts forth blossoms at the touch of women. In MP it is recommended for storing in a fort and use in rituals. Stated as an antidote against poison.

Aglaia odorata

Ṣaḍ. Rv. V. 2

Pṛśni-parṇī (Aṛṣṇi)

Uraria logopioides Lemna Sp. Hemionitis cordifolia

AV ii. 25·1 (Protection against wild creatures).

ŚB xiii 8. 1. 16

S. B 13. 8. 16

MP 217.43

AK 104. 93

Recommended for storing in a fort. Roth (cited by Whitney) identifies it with a plant, called *Lakṣmaṇa*, curing barrenness.

Puga

Areca catechu

R IV. 44 VI 64 ; XIII. 17

MP 118.9, 255.24

AK 123. 169

Kad 56

KS III 3.16, III 5 29

UV 8

Grows on seaside. A house having it is believed to be prosperous and beautiful.

Punarnavā

MP 217.51

Ak 118. 149

In MP recommended for storing in a fort.

Puṇḍarīka

Lotus. *Nelumbo nucifera.*

RV X. 142.8

AV iv 35.5

Taitt. Sam. i. 8. 2. 1

ŚB V 5. 5 6

Bṛ. Up. ii. 3.10, vi. 3 14

Ch. Up. i. 6.7

Ait. Āra. iii. 34

K VIII. 58
V IV 42
R IV. 17, X. 9; XVIII. 8
Mal IV. 7
UV 10

Punnāga

Calophyllum inophyllum.
VP 161·56, 180.25, 43; 255 22
AK 86. 25
UV 7
Believed to be auspicious if it be near a house.

Puṣkara

Blue lotus. *Nymphaea Stellata.*
RV vi. 16 13, vii. 33.11, X. 184 2
AV xi. 3 8, xii. 1 24 (Mentions sweet fragrance of flowers)
Taitt. Sam. V 4.1; 2.6, 5; 6. 9 2
Vāj Sam. xi. 29
T. B 1. 2. 1 4
SB iv 5.1, 16
Mait. Sam. iii. 1.5
Br Up. iv 3.11
K III. 65
R XVIII. 30, 37
Pan V. 2 135

Puṣpahaṃsa

MP 217.48
Recommended for storing in a fort.

Pūtika

Caesalpina fonducella. Rasella rubra.
Kāth. Sam xxxiv 3
SB. xiv 1. 2, 12
P Ar. viii. 4.1, IX. 5·3
AK 92. 48

Putrajīvaka

MP 118.24

Putrajīvā

AV viii. 8 2

Putrakandā (Putrajani, Putada)

Uraria logopo diodes
AV ii. 25. 3 (Remedy against abortion and other maladies).

Putudru

Pinus Sp
AV. viii. 2, 28
Taitt. Sam. vi. 2. 8. 4
Mait. Sam iii 8. 5
Kaus. Sūtra viii. 15, lviii. 15

Rājādana

AK 92 46
MP 217. 80
In MP recommended for storing in a fort.

Rājadanta

MP 67. 7

Rājajambu (-Ka, See Jambu)

V. IV. 27
MP 118. 30

Rāja Kośātakī

UV 27

Rājamāṣa

Vi 79. 18

Rajanī

UV 68
One of the trees stated to cause fear (*bhitida*).

Rājasarṣapa
MP 217 50
Recommended for storing in a fort.

Rājaśīrṣaki
MP 217. 49
Recommended for storing in a fort.

Raktālukandaka
MP 96. 10

Rājatālī
R IV. 56

Rājīva
K III 45

Rajjudāla
S B. 13. 4. 4. 5

Rakasandhyaka
UV 10

Raktotpala
Nymphaea rutra Roxb
UV 10

Rambhā
Musa sapientum L.
Mal III. 10
MP 217. 43
In MP recommended for storing in a fort.
A beautiful woman's thighs are likened to this plant or rather its interior.

Rasañjana
MP 217. 71
Recommended for storing in a fort.

Rāsnā
Vanda roxburghii
AK 109. 115, 116. 140

Rajjudāla
Cordia obliqua
S. B xm 4. 4. 16

Rasona
UV 49
AK 118. 149

Reṇukā
AK 111. 121

Riṣṭaka
MP 118. 6

Rocanī
AK 118. 147

Rohiṣa
MP 217 65
Recommended for storing in a fort.

Rohitaka
Aphanamixis polystachia
Mait. Sam III. 9.3
Pan IV 3. 152
AK 93. 49
UV 132
There must be water 94½ cubits below and 3 cubits away from the ground where a *Badari* tree is found adjacent to a *Rohita* tree.

Ṛṣabha
MP 217. 43
Recommended for storing in a fort.

Ṛṣyaprokta
MP 217. 50
Recommended for storing in a fort.

Ṛṣyagandhikā
AK 108. 111

Rudanti
MP 217. 65
Recommended for storing in a fort.
Rudrākṣa
Elaeocarpus ganitrus Roxb.
MP 118 24
Ruruṭa
MP 118 29
Sada
Pan IV. 2. 88
Śāda
Grass
RV IX. 15.6
Vaj Sam. XXV. 1
Sadampuṣpa
Ever flowering plant.
AV IV. 20.9
Used for driving away Piśācas goblins).
Sadgrantha
MP 217 71
Saevala
R II. 51
V p. 95
Sahā
AV XI. 6.15
Sāmavidhāna Br. ii 6 10
AK 99. 74
Sahadeva
RV I. 100. 17
Sāma. Ar. ii. 6.10
MP 217 46
Recommended for storing in a fort.
Sahadevī (See under Arundhotī)
Vernonia cineria Less.
AV VI. 59 2
MP 217. 48. 266. 14
Recommended for storing in a fort.
Sahakāra (See Āmra)
V II. 6
A I. p. 31 ; III. p 95
K IV. 38 ; VIII. 78
R VI. 69 , VIII. 61 ; IX, 33 ; XVI. 52 ; XIX. 46
Mal IV. 13 ; V. 4
RS II. 22, 27, 34
KS VII. 1. 30. 32
MP 118 3, 180. 28
Sahamāna
AV ii. 25.2
IV 7 2
VIII. 2.6 ; 7.5
Śaileya
R VI. 51
RS VI. 25
AK III. 125
Saireyaka
AK 99. 75
Śairya
Species of grass infested with insects.
Rv. I. 151. 3
Śāka
Tectona grandis L. f.
UV 25
Śāla
Shorea robusta Gaertn.
R 1. 38
K XIII. 33
Exudes fragrant sop.
AK 92. 45
Kad 369
UV 7

VP 43. 6
MP 154. 576, 161. 57, 257 8.
Recommended for building purposes.

Salāñjalā
Grain creeper
AV. vi. 16.4
Kaus. Sūtra, ii. 16

Śāli
Oryxa Sativa (a variety)
R IV 20, XV 78; XVII. 53
Rs. III. 1, 10, 16; IV. 1, 8, 18, V. 1, 16.
H 100

Sallakī
V IV 44
K VIII. 33
Elephants feed on its leaves. Emits sweet smell when broken.
AK 112. 124
Kad 83
MP. 217 65, 218. 2
Recommended for storing in a fort.
UV. 10

Śālmali
Salmalia malabarica Schott.
RV VII. 50.3 (Fruit poisonous). X. 85.20 (Bridal car made of its wood)
Taitt. Sam vii. 4. 12 1 (Tallest of trees)
Vāj. Sam. xxiii. 13
SB xiii. 2. 7 4
PBr ix. 4.11 etc.
Pan IV. 2. 82
SB 13. 2. 7. 4
RS I. 26
MP 161 57
Vi 61.5
AK 92. 47
UV 198
One of the trees whose barks, powdered and mixed with some other substances, should be applied to the root of a cotton tree to ensure cotton of the colour of the wing of a parrot.

Śāluka
Nymphaea lotus L
AV iv. 34.5
MP 217 52

Samala
MP 118 3

Samanga
MP 217. 77, 218. 5
Recommended for storing in a fort.

Samarataka
MP 118. 7

Śamī
Prosopis spicigera. Minosa Suna
AV vi. 11.1 (wood used as lower *araṇi* for kindling fire) 30. 2.3 (destroys hair)
Taitt. Sam. v. 1 9 6, 4 7 4 (Wood used as lower *araṇi* for kindling fire).
Kāṭh. Sam. xxxvi. 6
Taitt. Br. i. 1. 3 11 *et. seq* 6. 4. 5

SB II. 5.2;12, IX. 2.3.37 etc.
Vi 61.4
MP 93. 27, 118. 10. 255. 23
IV 3. 142
Pan. V 3. 88
A IV 3
R VII 26
AK 93. 52
UV 7
Supposed to contain latent fire.
The smell of its flower is as strong as that of the elephant's ichor. In AV said to cause intoxication. Broad-leaved.

Samidh
MP 93. 27

Śamidhānya
MP 217. 52
Recommended for storing in a fort.

Samirana
UV 13

Śaṇa
Crotolaria juncea
AV II. 4.5 (said to grow in forests. Remedy against Viṣkāndha.)
SB. I. 6. 1. 24 , 2.15 III. 2,1 11.
VI 61 5
UV 33
MP 217. 39
In MP recommended for storing in a fort.

Śaṇapuṣpikā
AK 107 107

Śaṃkhapuṣpī (kā)
Canscora decussata R & S
AV VII 38.5
B II 1. 21
Vas XXVII 11
UV 33
MP 267.15

Śaṃkhinī
Xanthium strumarium L
AK 113. 127

Sāṇḍadūrvā
Cyperus rotandus
AV XVIII 3.6

Santāna
MP 92.6 etc

Saphaka
Trapa bispinosa
AV IV 39 5
Ap Sr, Sūtra, IX 14.14

Saptacchada
R V 48
RS III 2, 13
Kad 91

Saptaparṇa
(Saptaparṇī –*Alstonia scholaris* R. Br)
A I. p. 38
R IV. 23.
MP. 118 4, 161 64-65, 217 70.
AK 85 23.
KS. II 2. 5.

Śara
Saccharum arundanaceum
RV I 191. 3
AV IV 7. 4 ; I. 2. 1 ; 3. 1
Taitt. Sam. V. 2. 6. 2 ; VI. 1.3 3

Kāṭh. Sam. ix. 5, xxviii. 4
SB. ii. 2. 2; 4. 1; iii. 1 3.13
Bṛ Up. vi. 4. 11 etc.
Nirukta, V. 4 etc.
B 1. 14. 11
Pan VIII 4. 5.
Me. 47.
K VIII. 74, XI. 13.
R XIII 26.
Its stem, when ripe, becomes very white. A woman's bright cheek is likened to it
AK 122. 162.
MP. 118 35

Sarala
Me. 55.
K 1 9
R IV 75.
Emits sweet smell when broken.
AK. 95. 60.
Kad 369.
UV. 43
MP. 161 56, 257. 11.

Saraṇa
AK. 119 153.

Sarafija
A I. 17.
R. V 69.

Sariva
Ichnocarpus frutescens R. Br.
UV. 24.
MP. 217. 44.
Recommended for storing in a fort.

Sarja (Sarjaka)
RS. II. 17, III. 13.
VP 78. 11.
MP. 118 30, 217 62, 266 12.
VI. 61 14

Saroja
KV 27, IX. 17, XIII. 32.
Mal. V. 3

Saroruha
K I. 16, IX. 27, XI. 21

Sarṣapa
(Sarṣopa—*Brassicanapus* L.)
Ch Up. iii. 14 3
Sad. Br V. 2
Śāṅkh. Śr. Sūtra iv. 15 8 etc.
VI 79 17
UV. 148
KS IV. 1. 6
UV states that powdered oil-cakes of white mustard, if applied to roots of Date-trees and Bel trees, help their luxuriant growth.

Śaṣpa
V IV 57
RS I. 22
AK 123 168

Ṣaṣṭhika
UV 33

Śatamūli
Asparagus racemosus Willd.
AK. 106. 101

Sataparṇi
(Śatapattri—*Rosa Centifolia* L.)
MP 95 25, 217 46

Recommended for storing in a fort.

Sataprasa
AK 99. 77

Śatapuṣpa (-ī)
Peucedanum sowa Kurz.
AK 119. 152
KS IV 1 6
MP 217 48
In MP recommended for storing in a fort

Śatavārī (a)
Asparagus racemosus Willd
AV xix. 36
AK 106. 101
MP 217 49
In MP recommended for storing in a fort.

Sauvīra
MP 217. 58
Recommended for storing in a fort

Savi (ti) naka
VP 8 151

Śeṇu
MS V. 6
AK 89. 35

Śephālikā
Nyctanthes arbor-tristist.
RS III. 14
AK 98. 71
Kad 77
UV 42

Siddhārthaka
MP 243. 18
Supposed to be auspicious at the time of storing on a military expedition, etc.

Sidhraka
SVB III. 6. 9
TB III 4. 10
B II. I 15
Pan VIII. 4. 4

Śigru
VI. 61 3, 79 17
AK 87 31
YS 1 7 171
MP 217. 62
In MP recommended for storing in a fort

Si ācl
A hea. ng plant, also called *Lākṣā.*
AV V. 5. 1. 8

Śilāñjālā
Grain creeper

Silapatra
MP 217. 77
Recommended for storing in a fort.

Śilīndhra
Me 11

Simbala
RV III. 53·22

Simbi
MP 118 32
Simbī
AK 106·103
MP 217·48, 267·15
In MP recommended for storing in a fort.

Śiṃśapā (Śiṃśapā-drum)
Dalbergia sisu
RV iii 53·19 (A stately and beautiful tree).
AV XX 129·7

Pan VII 3·1
AK 96·63
UV 3
KS VII 1 30
MP 118·3, 217·78, 257·10

Sindhuvāra
K III.53
Its flower is pearl white.
AK 98·69
Kad 151
UV 25
MP 60·38 etc

Singiveran
UV 13

Sipāla
Blyxa Ceylanica
RV X 68 5
AV VI. 12. 31
SB III 1
Later form Śaivala.

Sirapada
MP 118 54

Śirīṣa
Albizzia lebbek Benth.
Pan IV. 2 80
Me 71
A I 4, 26, VI. 18
K I. 41, V. 4
R XVI. 48, 61 XVIII. 45
Used as ear-decoration by women.
AK 96 63
UV 7
MP 56·6, 118.3

Sisapatra
KS VII 2·21

Śiśu
Dalbergia sisso Roxb.
UV 166
It is stated to grow luxuriantly if, being fumigated with barley, wine, fermented rice-water and clarified butter, its trunk is besmeared with cakes made of *vidaṅga* and sesamum soaked either in milk or in *Kunapa* water. *Kunapa* denotes a corpse. Does it mean water with which a dead body has been washed ?

Śiśumāra (—mārī)
UV 138, 208
If it be found on stony ground, then 3 cubits north of the ant-hill adjacent to it and 13⅓ cubits below the ground water is to be found.

Sitāmbhoja
UV 10

Śītapāki
MP 217·51
Recommended for storing in a fort.

Sita-śāli
(Sitsal—*Dalbergia latifolia* Roxb.)
UV 80
Scattering boiled white Śāli rice, mixed with curd and rock salt around trees ensures their protection against poisonous rain injurious to them.

Śiva
(Śivaliṅga—*Couroupita guianensis* Aubl)
UV 24
Ślakṣaparṇī
KS VII. 2·37
Śleṣmāntaka (Śleṣmātaka)
VI. 61 2
VP 69·135
AK 89·35
UV 29
MP 118 4, 257 8
This is one of the trees inauspicious for the residential house.
Snuhi
Euphorbia neriifolia L.
H 4.0
Snuk
AK 107·106
Snyhaśaka
KS VII. 2·30, 36
Sobha
MP 118 12
Sobhāñjana
AK 87. 31
UV 42
Soma
(Somalatā—*Asclepias acida* Roxb.)
Sar costemna brevistigma. S intermedium. Periploca aphylla. Ephedra vulgaris. Cannabis sativa
Kad 132
UV 25
KS VII. 2. 31, 36.
Somabanaka
MP 217 53.
Recommended for storing in a fort.
Somarāji
Vernonia anthelmentica Willd
AK 105. 96
Somavakya
UV 10
Somavatī
RV X 97 7
A major medicinal plant.
Sonaka
Crotolaria juncea ?
AK 95. 58
Spandana
RV iii 53 19
Pan IV 3. 141
A tree.
Sphūrjaka
Diospyros peregrina
SB xiii. 8. 1. 16
Śraktya
clerodendron phlomidis
According to commentators on AV viii. 5 4. 7. 8, amulet, made of its wood.
Śravaṇapiṅgaka
KS VII 2. 37
Srekaparṇa
Nerium odorum
Taitt. Br. iii. 6. 6. 3
AB ii. 6.15
Śrīparṇī
KS VII. 1. 46
UV 25
MP 257 10, 274.32
Śṛṅgāṭaka (-i)
Trapa bispinosa Roxb.

KS VII 1. 39, 43
MP 217. 45
In MP recommended for storing in a fort.

Śṛṅgavera
MP 118. 40

Śṛṅgī
AK 106. 100.
AK 110. 117
MP 217 45
In MP recommended for storing in a fort.

Stamba
KS IV. 1 6

Sthalakamala
Me 97
A woman's beautiful feet are likened to it.

Sthalapadma
Hibiscus mutabilis L.
UV 25

Sthalāravinda
K I. 33.

Stri
MP 217. 76
Recommended for storing in a fort.

Sugandhikā
UV 10

Sugandhitejana
Andropogan squarrosus
Taitt. Sam. vi. 2. 8. 4
Kāth. Sam. XXV 6
A. R. i. 28 28
SB iii. 5. 2. 17
P. Br, xxiv 13·5

Śukadhānya
MP 217.52
Recommended for storing in a fort.

Sukanasa
KS IV. 1. 29

Sukaraka
UV 33

Sukasaka
(Sukasa—*cucumis sativus* L)
UV 8

Śukasimbi
AK 102.87

Śukra
MP 217.47
Recommended for storing in a fort.

Sumukha
MP 217.63
Recommended for storing in a fort.

Suradāru
Polyatthia longifolia
Same as Devadāru
MP 257. 9
Recommended for building purposes.

Suragoda
MP 118.38

Surana
KS IV. 1. 29

Suramandaka
MP 96 9

Surasa
AK 109 115

Sūryavalli
(Sūryapatra—*Calotropis gigantea* R. Br.)
UV 14

Susira
AK 118. 130
Suvarcalā
Suvarṇaka—*Cassia fistula* L
MP 118.30, 267 15
Suvaha
AK 110. 119
AK 116. 140
Svādukaṇṭaka
MP 118 29
Svodhā
A plant.
AV VI. 96.3
Svadhiti
RV v. 32.10
ix. 96.6
According to Roth, a huge tree with hard wood
Svarṇapuṣpa
UV 33
Śvasanti
MP 217. 44
Recommended for storing in a fort.
Śvetakadruma
MP 118. 23
Svayaṃgupta
KS IV 1.29
VII 1.41, 43
Śyāma
Me 109
RS III 18
A woman's delicate frame is compared to it
AK 94.55
AK 109. 112
UV 14
Śyāmāka
Echinochloa colona
AV xix 50.4, xx 35.12
(food of pigeons)
Taitt. Sam. i 8. 1. 2; ii 3.2 6, iv 7.4.2
Mait. Sam. iii 11.4
Vāj Sam xviii 18
Kāṭh. Sam. x 2
SB. x 6.3.2; xii 7.1 9 etc.
Kaus. Sūtra iv 12
Ch. Up. iii 14.3
B III 2. 15
VI 80. 1
A IV 13
The deer feed on it.
AK 123 166
VP 78. 6-9
MP 217 72, 79, 266. 12
According to VP, its sticks are recommended for use in the Agrayāṇa offerings to Pitṛs.
Śyāmalatā
UV 33
Syandana
Same as Spandana (q.v.)
Kaus. Sūtra viii 15
MP 257. 11
Believed to be auspicious for building purposes if used alone. According to Roth, wood of a tree is meant.
Sugandhi tejana
SB 3. 5. 3. 17
Syonaka
MP 217. 76

Recommended for storing in a fort.

Tagara

Tabernaemontana coronaria Willd.

KS IV. 1. 7, VII. 1. 4, 9, 32; VII. 2. 41

UV 47

MP. 118. 38, 217. 70

In MP, recommended for storing in a fort.

One of the trees growing from stems.

Tājadbhaṅga

Ricinis communis

AV. VIII. 8 3

Kauś. Sutra, XIV. 14

Takṣmaṇa

UV 21

Tāla (Tālī)

Boranus flabellifer.

Pan IV. 3. 152

Me 32

V V. 10

R IV. 34 ; VI. 57 ; XV. 23

AK. 113·127, 123. 169. 124 170

Kad 71

UV 3

VP 37·23 f. f.

MP 96·9, 118 3, 161 57, 59, 217, 49

In MP recommended for storing in a fort.

Grows on seaside.

Talāśa

Flacourtia cataphracta

AV. vi. 15.3

According to Whitney, same as *Tālisa* below

Tālāsphoṭa

MP 217, 73

Recommended for storing in a fort.

Tālisa

KS VII. 1. 4, 9 ; VII. 2. 41

MP 217. 70 (Tālisapatra)

In MP recommended for storing in a fort.

Tamāla

AP. I. 2. 37

K III. 53

R VI. 64 ; XIII. 49

K IV. 1·6, VII. 1. 9

Kad. 60

AK 97. 68

UV 10

MP 118·3, 161·57, 65 ; 180·25

Its bark is used in making girdles for Vaiśya Brahmacārins. Grows on seaside.

Tāmalaki

AK 113 127

Tāmarasa

K VIII. 26, 32

R VI. 37 ; IX. 12, 37

Tāmbūlī (Tāmbūla)

R IV. 42 ; VI. 64

RS V. 5

AK 111·120

Kad 308

UV 47

One of the plants growing from stems. It grows in the Malaya region

Tandi

AV X. 4.25

Taṇḍula

AP I. 2.37

Tantumāla

MP 118 8

Tāpiccha

AK 97.68

Tarkāri

UV 214

One of the plants a decoction made of (the leaves of) which, when sprinkled over a tree, is stated to render it devoid of fruits and flowers.

Tārṣṭāgha

A tree.

Kaus Sûtra. XXV. 23

AV. V 29·15 (*tārṣṭāghī*)

Mustard plant, according to Weber.

Tila

Sesamum indicum DC

AV. ii. 8.3 ; iv. 7 3 ; vi. 140·2 ; xviii. 3.69 ; 4.32

Taitt. Sam. vi. 3.2

Vāj. Sam. xviii. 12

SR. ix. 1 1.3 etc.

Br Up. vi. 3.22 ; vi. 4.16 (Tilaudana)

Ch. Up. V. 10.6 etc.

Sāṅkh. Āra. xii. 8

Sāṅkh. Āra. xi. 4

G VII. 20, XV. 26, XIX. 17

B II. 2.13, 14, 18 , II. 6.2 ; II. 15.4 ; IV. 5.26 ; IV. 6.4 , IV. 7.9

AP. I. 20.13 ; I. 26.15 ; I. 27·1 II. 16.22, II. 20.1.

Vas II 39

VI. 79.17 , 80.1 ; 87.8 , 90.27

VP. 8, 150

Its sale is forbidden (perhaps for Brāhmaṇas). It has to be eaten in certain expiatory rites (A I. 26.15). Fit for use in *Śrāddha*. From B (II 2.13) its use only for eating, unction and gift appears to have been prescribed. Black *tila* has to be cast over a kind of cow given away in a certain mode of *Prāyaścitta*. (B II 6.2). Living on *tila* only on full moon days throughout the year is a penance for expiating certain sins. *Kṛṣṇa-tila* is mentioned in VP. in connexion with *Śrāddha*.

Tilaka

K III. 30 ; VIII. 40

R I. 41, 44

Mal. III 5

AK 90.40

UV. 8

MP 161 56, 180.35, 255.23

Tilaparṇikā

KS IV. 1.29

Tilapuṣpa
MP. 118. 15.
Tilva (Ka)
Symplocos racemosus
SB. xiii. 8. 1. 16
Mait. Sam. iii. 1. 9
Ṣaḍ. Br. iii. 8
Yūpa stated to be made of its wood.
VI. 61 3.
Timira
UV 10.
Tinduka (Kī)
VI. 61. 3.
AK 90. 39.
UV 10.
MP 161. 60, 257. 10.
Tiniśa
UV. 10.
(Ka, Tin tini A II, p. 71)
Tintiḍī
Tamarindus indica L.
AK 91 44.
UV 8.
MP 96. 7, 118. 22, 217. 55.
In MP recommended for storing in a fort.
Tokma
AP I. 20. 12.
Trade in it is prohibited.
Trapusa
Cucumis sativus L.
KS IV 1. 29.
VII. 2. 28.
MP. 118. 27, 217. 51, 227. 111.
Trāyamāṇa
AV. viii. 2.6
AK 119. 151.
Trivṛta
UV 21.
MP. 217. 77.
In MP recommended for storing in a fort.
Tūda
AK 91. 42.
Tulasi
Ocimum sanctum L.
UV 8.
A sacred plant which sanctifies the house, and ensures the happiness of the householder in the other world.
Tumbara
MP. 118. 14.
Tumbi
AK 120. 156.
MP 217. 73.
In MP recommended for storing in a fort.
Tuṇḍira
MP 96. 7.
Tunna
(Toona—*Cedrela toona* Roxb.)
AK 113. 128.
Tuṣaparṇī
MP 217. 72.
Tuvarikā
AK 113. 131.
MP. 217. 76.
Tvagdruma
MP. 118. 25.
Uccarakanda
KS. VII. 1. 35

Uccaṭā
AK 121. 160
Udāra
VP 8. 151
Udjasā
RV x. 97·7
A major medicinal plant.
Udumbara
Ficus glomerata.
AV. xix. 31.1 (Amulet)
Taitt. Sam. iii. 1.1.6
P. Br. xvi. 6.4 (forests of Udumtara)
SB. iii. 2.1 3
VII. 4. 1.38 etc.
Taitt. Sam. iii. 4.8.4 V 47, 3
(Wood used for ritual purpose. *Yūpa* and ladle made of its wood.)
AB V. 24 (fruit ripens three times a year) viii. 13 fruit sweet as honey.
S. B 6. 6. 3. 2.
AP I. 2. 38
V XI. 54, XXVII 12.
Pan. IV. 3 152
Me. 44
AK. 85.22
UV. 3
VP. 75 67
MP 217.78, 255.20, 265.31
The staff of a Vaiśya Brahmacārin is made with its wood. According to V (XXVII. 12), used to prepare a decoction to be taken by one who has committed certain kinds of sins. According to VP sticks, fruits and vessels, made of its wood are good for *Śrāddha.*
Udumbaraparṇi
AK 117. 145
Ugragandhā
AK 106. 103
Uhu
UV 9
Ulapa
Imperata arundinacea
RV. X. 142
AV vii. 66.1
Vāj Sam. xvi. 45
Mait. Sam. I. 7.2 (*upolapa*)
AK 81. 9
Upavāka
Wrightia tinctoria
Vāj. Sam. xix. 22-90
xxi. 30 (stated to have healing property)
SB xii. 7.1.3 , 2.9 etc.
Upodaka
AK 121 158
Upolapa
Same as *Ulapa* above.
Uraṇākṣa
AK. 118. 148
Ūrjayanti
RV. X. 97.7
A major medicinal plant.
Urupuṣpikā
MP. 217. 51
Recommended for storing in a fort.
Uruvūka
AK 93. 51

Urvārū (ka)
Cucumis melo. C. sativus.
AV. vi. 14.2
RV. vii. 59 12=AV. xiv. 1.17=Mait. Sam. i. 10.4 =Taitt. Sam. i. 8 62= Vāj. Sam. iii. 60
P. Br. ix. 2.19

Uṣaṇā
Piper longium
P. peepuloides
SB. iii. 4.3.13 ; iv. 2.5.15
AK. 105. 97

Uśīmāra
UV. II.

Uśīra
Andropogon squarrosus Hack.
A. 1. 84
AK. 122. 164
AK. 122. 164
UV 13
VP 75 32
MP 217. 68, 266. 13 etc.
Mentioned in VP in connexion with *Śrāddha.*
In MP recommended for storing in a fort.
A soothing unguent appears to have been prepared from it.

Utkaṭā
MP 217.50
Recommended for storing in a fort.

Utpala
Me 26
A I. p. 27
K IV.8 ; VII. 20, 81
R III. 36 ; VI. 42 ; VII. 26 ; XII. 86, XIII. 31
RS. II. 9, 14, 15 ; III. 14, 24 ; V. 10
K IX. 26, XVII. 35
KS. VII. 1.6. 8 ; VII. 2. 35
AK 68. 37. 122 126.
UV. 10

Utpalaśārivā
AK. 109. 112

Vacā
Acorus calamus
AK 106. 103
MP 267. 14
UV 13

Vadarī
Zizyphus jujube Lamk.
UV 8

Vaiṣṇavī
Does it denote Tulasī and Aparājitā ? If so, for botanical names see those words.
MP 266. 14

Vajrakāṇḍa
KS VII. 2. 41

Vakula (See Bakula)

Valgujā
KS VII. 2. 36
MP 118. 23

Vallaka
UV 17

Vallīphala
UV 8

Vālukā
MP 96. 5

Vaṃśa
Bambus arundinaea Willd. *Bambusa tulda.*
Pan V. 1. 50
Me. 87
RS 1 25
AK 121. 161
H 410
UV 12
Vaṃśikartra
VP 78. 11
It is a taboo in *Śrāddha.*
Vanaja
R V.73
Vanajayanti
UV 60
Vānaparṇi
Water plant.
AV i.i. 18.1
Vanaspati
G III. 20, XII. 25
B I. 8. 26
Ap. I 7 4, I 11 5, I 17, 19, I 30. 24, II 2. 4
A IV. p.p. 130, 131
The tearing of its leaves and flowers is forbidden.
Vana-tarkāri
UV 60
Vandhūka
VI. 61
Vānira
Me. 43
R XIII. 30, 35 , XVI. 21
AK 87 30
UV 10
Vañjula
Saraca indica L.
UV 10
Vaṅkoṭa
AK 87 29
Vārāhī
AK 119. 151
UV 24
Vara-karkāri
UV 194
One of the trees whose barks, pasted with and boiled in milk, can stop the exudation of trees.
Varaṇa
Cratoeva nurvalla
AV vi. 85. 1, x.3. 1; xix. 32.9
P Br. v 3. 9 10
SB. xii. 8 4. 1
Pan IV. 2. 82
AK 86. 25
Varhis
K I. 60
Vārija
K XV. 12
Vāriparṇi
UV 10
Vārīruha
K VIII. 33
Varṣṭaka
MP 118 24
Varṣābhū
MP 217 45
Recommended for storing in a fort.
Vartadbhrantapatra
KS VII. 1 25
Vartaka
KS. IV. 1. 29

Vārtāki (-U, -s)
Solanum melongena.
AK 109. 114
Vi. 79 17
UV 8
MP 118. 28
Varuṇa (-Ka)
UV 22
MP 161. 60
Vāsika
Adhatoda vasica Nees.
UV 14
Vāstuka
AK 121. 158
UV 8
Vaṭa
Ficus benghalensis L.
Pan VI. 2. 82
R XIII. 53
AK 88. 32
UV 3, 7
VP 30. 250
MP 96. 11
In MP it is stated that this tree, growing to the east of a house, fulfils all desires.
Vātāma
MP 217. 353
Vātapotha
AK 87. 29
Vatsanābha
MP 161.60
Vāṭyālaka
Sida cordifolia L.
AK 107. 107
Vayaḥsthā
MP 217.64
Recommended for storing in a fort.
Veṇu
Bambusa sp.
MP 118.35
VP 75
Its leaves are recommended for use in *Śrāddha*
B L 14. 11.
AK 121. 161
Vetasa
Calamus tenuis Roxb.
Pan IV. 2. 17
A II. p. 60 ; III. pp. 87, 113
R IX. 75
AK 87 29
H 387
UV 10
KS VII 2. 19
MP 118.10, 217.73
Pleasure-bowers appear to have been made with *Vetasa* plants.
Vetula
UV 14
Vibhītaka
Terminalia belerica Roxb
RV iii. 86.6 ; x. 34.1
AV (Paippalāda) xx. 4.6
Its fruit used in making dice
RV VII. 86.6
X. 34.1
VI 61.2
Ap II. 25.12
Pan IV 3.152
MP 161.62, 257.7

MP forbids its use for building purposes.

Viḍaṅga
AK 107.107
MP 118.22
UV 16

Vidārī
Ipomoea paniculata R. Br
KS VII. 1.37, 38, 41
MP 118.29

Vidāryā
MP 217.45
Recommended for storing in a fort.

Vidruma
MP 217.78
Recommended for storing in a fort.

Vidūsāra
MP 118.30

Vihalha
A plant
AV vi. 16.2

Vikaṅkata (Vikaṅtika)
Flacourtia ramontchi
Taitt. Sam. iii. 5.7.3 ; vi. 4.10.5
Kāṭh. Sam. xix. 10
Mait. Sam. iii 1.9
AV xi. 10.3
SB i. 2.4, 10 ; V. 2.4.18 etc.
Pan IV. 3.141
R XI. 25
AK 90.38
Sacred. Ladles for sacrifice were made of it.

Viraṇa (Virina)
Andropogan muricatus
SB xiii. 8.1.15
MP 217.47
AK 122.164
UV 117
Four and a half cubits below the ground, where this is seen, water is to be found. In MP recommended for storing in a fort.

Viravṛkṣa or Virā
AK 91.43
MP 217.44
Recommended for storing in a fort.

Viriṇa
SB 13.8.1.15

Virudh
G XII. 25

Viṣā
Aconitum napellus L
MP 217.69
Recommended for storing in a fort.

Viśalyakaraṇī
MP 122.56

Viṣanakā
Gymnema sylvestre
RV vi. 16.20 ; xi 96.8
AV vi. 44.3 , ix. 8.20 (remedy against disease)

Viṣaṇī
MP 217.73
Recommended for storing in a fort.

Viṣṭara
Pan VIII. 3.93

Viśvadeva

MP 217·48
Recommended for storing in a fort.

Vitunna
AK 118 149

Vrīhi
Oryza sativa
AV vi. 140.2 ; viii. 7.20 ; ix. 6.14 etc., xi. 4.13
Taitt. Sam. 8.10.1 vii. 2. 10.3 (Said to ripen in autumn.)
Kāṭh Sam. x. 6 ; xi. 5
Mait. Sam. iii. 10.2 ; iv. 32
Vāj Sam. xviii. 12
AB ii. 8.7 ; 11.12 ; viii. 16. 3 4
SB V. 5.59
Br Up. vi. 3.22
Ch. Up. iii. 14.3 ; v. 1.5 etc.
J. B. i. 43
G VII. 15
B L. 14 12
Ap. II 6.16, II. 16.22, II. 23.9
VI. 80·1
Fit for use in *Śrāddha*.
UV 148
VP 8.150
Certain trees are stated to grow if watered with paddy washings.

Vṛṣyā
MP 217.44
Recommended for storing in a fort.

Vyāghranakha
Martynia diandra Roxb.
AK 113.129
MP 217.72
Recommended for storing in a fort

Vyāghrapada
UV 24

Vyāghrī
MP 267.14

Vyaikasā
Water plant
RV X. 16.3
Said to grow on spots where dead bodies are burnt.

Yajñaḍumura
Ficus cunia Ham or *Ficus glomerata* Roxb.
UV 55

Yājyā
MP 217.63
Recommended for storing in a fort

Yaṣṭimadhu (ka)
Glycyrrhiza glabra
AV i. 34.5 (Used for virility and sexual pleasure).
AK 108 110
UV 202
One of the ingredients which, after being pasted together, are applied to the root of a tree to ensure fruits without seeds within.

Yava (ka)
Hordeum vulgare L.
RV i. 23.15 ; 66.3 ; 117.21 ; 135.8 ; 176 ; 2 , ii. 5.6 ;

14.11 , v. 85.3 ; vii. 3.4 ; viii. 2.3 ; 22 6 ; 63.9 , 78.10 ; x. 71 2 etc.
AV ii. 8.3 , vi. 30.1 ; 50. 1. 2 ; 91 1 , 141.2 ; viii. 7.20 ; ix. 1.22 ; 6.14 ; x i. 1 22
Taitt. Sam. vi. 2. 10. 3 ; 4. 10. 5 ; viii 2. 10. 2
Kāṭh Sam xv 10
Mait. Sam iv. 3.2
Vāj Sam. v. 26
Taitt. Br. i 8 4. 1
SB i. 1. 4. 20 , ii. 5. 2. 1 ; iii. 6. 1 9. 10 ; iv. 2. 1 11 xii. 7. 2. 9
Ch. Up. iii. 14.3 *et. seq.*
Kauṣ' Br. iv. 12
G VII. 15
B III. 6. 4–10, III. 8.35
VI. 79.1
Vp. 8.150
K VII 17.82 , VIII 62
R IX. 43 , XIII 49 , XVII. 12

UV 28, 33
Shoots of it appear to have been used by women as ear-ornaments. Used in religious rites.
Very sacred and capable of washing off many sins.

Yavānikā
Carum copticum Benth
AK 117.145

Yavasa
AK 103 92
MP 118.10

Yūthikā
Jasminum auriculatum Vatl.
Me 26
V IV. 46
RS II. 24
AK 98.72
H 455
MP 118.14
Women appear to have used it for decorating their hair

FAUNA

INTRODUCTION

Human beings have been co-existing with beasts and birds ever since the beginning of creation. Some of these were hostile while others hospitable. They had to fight and kill the ferocious beasts and birds, and various weapons had to be devised for the purpose. The flesh of some of these was edible to them. Preying upon wild animals was thus a necessity for

their self-preservation. As there was transition from the hunting stage to the agricultural and pastoral one,man learnt to domesticate certain beasts and birds. Some of the animals were used for drawing ploughs. In course of time, some of them were employed as beasts of burden and the milk of some came to be used as food The hairs of some animals were used for covering the body against cold.

The picture of wild life and animal kingdom was not different in India The ruins of the Indus Valley civilisation, roughly dating back to a period round about 3000 B.C. bear eloquent testimony to the awareness about and the popularity of certain animals The figures of such animals as the elephants, the tiger, the rhinoceros, the buffalo and the deer show that the people were fond of or had admiration for these beasts.

Before dealing with the zoological information contained in Sanskrit words it should be noted that the word 'jantu' does not necessarily mean a beast. It means any creature. In MS III.77 *jantu* is explained as a creature that takes the help of wind to live. In RV. 1.45.8, even a man is called *jantu*. This word, occurring in the *Abhijñānaśakuntala* (V.2), refers to human beings.

The *Ṛgveda*, the earliest written record of not only the Indians but also of the Indo-European people, is replete with references to beasts and birds. Of the domestic animals, the cow is mentioned most frequently. The horse is also common. Among the other animals are the following : *Vṛka*, lion, tiger, elephant, ass, mule, dog, buffalo, camel, goat, sheep, boar, deer, monkey, mongoose, hare, *godhā* (alligator). Among reptiles, serpents are mentioned. Among small creatures and insects are the scorpion, mouse, frog, etc. The abominable fly is ubiquitous.

Among aquatic creatures, some of which are not specified, we find the fish.

Among the winged creatures, we find the following[1] : *Cāṣa Cakravāka, Ulūka, Mayūra, Suparṇa, Haṃsa, Gṛdhra, Kikidivi*. The most frequently mentioned bird is the *Śyena*.

1. The Sanskrit names are mentioned. These will be identified, as far as possible, in due course.

In the Brāhmaṇas (e.g. *Śatapatha*, 26.213 ; 41 40 f.n. ; 43.211, 277) we find two broad classes of animals, viz. *grāmya* (rural) and *āraṇya* (wild) The cow continues to enjoy the reverence of the people. In point of vigour, speed, etc. the horse has been accorded an exalted position. *Aśvaḥ paśūnāṃ bhagitamaḥ* (*Śatapatha* 6. 3. 3. 13)—the horse is the most fortunate and favoured of all animals. This single line epitomises the attitude of the people of this age towards this animal. Other attributes of this ancient animal are *Vīryavattamaḥ* (the most heroic, *ibid*, 13. 1. 2. 5) *ojasvitamaḥ* (the strongest *ibid*, 13. 1 2 6), *Yaśasvitamaḥ* (the most famous *ibid*, 13 1. 2. 8), etc.

Various species of the deer have been mentioned in the Brāhmaṇas. Among other animals are mentioned the goat, mule, camel, porcupine, wolf, elephant, lion, wild cow (*gavaya* or *gomṛga*), cat, wild dog or hyena (*salāvṛka*), tiger.

Among small creatures are the tortoise, the frog, the mouse and the *gaṇḍūpada* or earthworm.

Various types of serpents are mentioned in the Brāhmaṇas. The main types are *nirdaṃśī* (*Aitareya*, 3. 12. 2) (that which does not bite), *Svaja* (double-headed), *manthāvala* (living on trees and hanging from branches), *andha* (blind). A peculiar type is *śākala*. It is stated to be moving about with its tail in the mouth (*Aitareya*, 3. 14. 5) Huge serpents living in water and those having eyes like burning embers are referred to.

The *godhā* or iguana is mentioned in this literature. The *Kṛkalāsa* or chameleon also appears.

The aviary of the society of Brāhmaṇas also reveals a variety *Śyena* (hawk, falcon) *Haṃsa* (swan), *Kalaviṅka* (sparrow), *Tittiri* (partridge), *Vāja* (falcon), *Kapiñjala* (hazel cockatoo), etc. are found in it.

Of the insects, bees and ants are common.

As some trees have been fancied as monarchs, Brāhmaṇas etc., so in animal kingdom, too, the tiger has been conceived as Kṣatriya, and king among the beasts and the lion as their *īśa* (lord).

Pāṇini broadly divides creatures into two classes, viz. animate (*prāṇin*—IV 3. 135, 154 ; also *prāṇabhṛt*—V. 1. 129) and inanimate (*aprāṇin*—II. 4. 6, V. 4. 97). These two are

called respectively *cittavat* (V 1 89) or that which has mind, and *acitta* (IV. 2. 47) or that which is devoid of mind The animate beings are sub-divided into human beings (*Manuṣya*—IV. 2 134) and animals (*Paśu*—III. 3. 69) Animals are classified as rural or domestic (*grāmya*—I. 2 73) and wild (*āraṇya*—IV. 2. 129). There are minor sub-divisions of animals too, e.g. *Kṣudra-jantu* (II 4. 8) according to size, and *Kravyad* (III. 2. 69) or that which is carnivorous.

That considerable Zoological knowledge was possessed by people in that remote age is attested by Pāṇini. He refers to the determination of the age of an animal by the number of its teeth (V. 4 141), the growth of horns (VI. 2. 1) and hump (V 4. 146). The words *dvidan* (possessed of two teeth), *asaṃjātakakut* (without the growth of the hump), *aṅgula-śṛṅga* (with horns of the length of one *aṅgula*), *Caturdan*, *ṣoḍan*, *pūrṇakakut*, *Vāgata-śṛṅga*, etc point to this knowledge.

From the words *dvihasti*, *trihasti* (Pan. V. 2. 38) it appears that the height of an elephant constituted a measure. The capacity for killing an elephant was a sign of valour, as conveyed by the term *hastighna* (Pan III 2. 54). That an elephant was driven with a goad is known from the word *totra* (Pan III. 2. 182) denoting this instrument.

The Dharmasūtras mention a number of beasts, birds, aquatic creatures, etc. The beasts, mentioned in them, admit of four broad divisions, viz. (1) *Eka-śapha*—having one hoof, (2) *Dvikhurī*—having two hoofs, (3) *Pañca-nakha*—having five nails, (4) *Ubhayatodat*—having two rows of teeth, one each in the upper and lower jaws.

Birds appear to have been broadly classified as (1) *Vikira*, *Viṣkira* or *vivṛṣkira* (A I. 17 32 ; B 1. 12. 7 , V XIV. 48) , (2) *Pratuda* (A. 1 17 33 , G XVII. 33) and (3) *Kravyāda* (A. 1. 17 34).

Of these, the birds of the *Viṣkira* type are so called as they eat insects, corns, etc. after scratching the earth or scattering them with their legs B (1. 12. 6) names the following as belonging to this class : *Tittiri*, *Kapota*, *Kapiñjala*, *Vārdhrāṇasa*, *Mayūra*, *Vāraṇa*.

Pratuda is the name of that class of birds which eat things

after pecking them with their beaks. The *dārvāghāṭa*, probably denoting a wood-pecker, appears to belong to this class.

Kravyāda denotes that kind of birds which subsist on flesh alone ; e.g. *gṛdhra*.

Other minor types were the *Rakta-pāda* (possessed of red legs), *Rakta-tuṇḍa* (having reds beaks), *Jālapāda* (web-footed)

From A (1. 17. 36), as explained by Haradalta, *Lakṣmaṇa* appears to have been a general name applied to birds having white or red heads.

The principal kinds of fish, mentioned in the Dharmasūtras, may be broadly classified as (1) *Vikṛta-rūpa*—misshaped and (2) *Avikṛta-rūpa*—having a regular shape.

It is interesting to note that, at some places, the word *Matsya* appears to denote not only fish, but other aquatic creatures too (e.g. A.L. 17. 39 , V XIV. 41).

There is no work, known so far, dealing exclusively with fish. The *Matsyavinoda* section of the *Mānasollāsa* of Someśvara appears to be the only work which, though dealing mainly with angling, contains considerable information on varieties of fish In this work, different kinds of fish are broadly divided into two classes, viz. marine and riverine. Each of these is sub-divided as scaleless and scaly. These are further divided as large, medium and small. Of the marine class, six scaleless and three scaly varieties are mentioned. Under the riverine class, it mentions twenty-one varieties of which six are scaleless and fifteen scaly. A few species of peculiar habits and habitats have been separately mentioned. In all, the work mentions thirty-seven varieties.

It is wrong to think that ancient Indians knew very little about fish, and to ichthyology their contribution has not much value. That fish was not only very familiar but also a subject of study is proved by ichthyiatrical references. The very first incarnation of God is named *Matsya* (fish). A goddess is designated as *Mīnākṣī* (having eyes like those of a fish) ; *mīna* means fish. This name is significant ; it, perhaps, refers to the phenomenon that the eyes of a fish do not close even when it sleeps. Thus, *mīna*-like eyes probably symbolise the kinetic energy of the goddess. One of the epithets of Cupid is *Mīna-ketana*

(having a fish as his banner) In the *Śatapatha Brāhmaṇa* there is the famous story of the Deluge in which a fish, reared up by Manu, is stated to have rescued him.

Fish appears in the remote Vedic age as an article of food. The epics refer to fish not only as an item of food[1] but also as causing great satisfaction to the manes[2] if offered in *Śrāddha*.

From the MS. the important rôle, played by fish in life, is evident. The wide use of fish as food[3] is attested by V 16 which mentions several species which are prescribed as offerings to gods and manes. Manu (VII 20) refers to the practice of roasting fish on a stake.

The intimate familiarity of the ancient Indians with the finny world is clear from the word *mātsya-nyāya* used at various places (e.g. *Arthaśāstra*, Book I Chap. 13) to denote anarchy and consequent confusion. It means the devouring of the small fish by the big ones.

The Tantras include *matsya* among the *pañcamakāras* regarded as a *sine qua non* for Tāntric *Sādhana*.

The Purāṇas contain many references to fish and fish-eating.

The *Suśruta-saṃhitā* (Sūtrasthāna, Chap. 46, the *Anūpa* Group 26) testifies to a good deal of knowledge relating to fish.

The very fact that there are several words denoting fish, each term referring to a characteristic feature of this creature, indicates the profound knowledge of the ancient Indians regarding the habits and habitat of fish. References to fish and the various terms, denoting fish, with their corresponding meanings, are set forth below :

1. *Matsya*

It literally means that which intoxicates or delights.

2. *Pṛthūroman*

Having big hair. It, perhaps, denotes a particular species rather than fish in general. It appears to correspond to the

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1. E.g. *Rāmāyaṇa* (Araṇya, 73 14)
   Mahābhārata (Cr ed), Śānti, 37.17
2. E.g. *Mahābhārata*, Anu, 88 5
3. MS. V 15 prohibits fish in general, the prohibition applying perhaps to Brāhmaṇas only ; the *Mahābhārata* (Śānti, 37/17 clearly prohibits fish for Brāhmaṇas.

English name cat-fish *Śakula, Śakalina or Śekulna* means a species having scales. It may be added that MS. (V 16) recommends scaly varieties as food and offering to gods and manes. The *Mahābhārata* (Śānti, 37 17) prohibits scaleless fish for Brāhmaṇas

Kaṇṭakin (having bones) and *Śuṅgin* (having horn) are terms indicating some other species.

3. *Jhaṣa*

It refers to the characteristics of killing small fish and other aquatic creatures.

4. *Mīna*

In one sense, it is synonymous with *Jhaṣa*. According to some, it means 'scattering or splashing water'. It may be noted that this predatory propensity of fish is also conveyed by the word *ātmāśīna* (eating itself or its own species.

The following terms denote characteristics common to all fish :

Visāra, Vikāra or *Vaisāriṇa* (signifying dignified movements of fish), *Aṇḍaja* (form of eggs), *Mūka* (speechless), *Animiṣa* (winkless), *Jaleśaya* (lying in water), *Uṣa* (glowing), *Sandhalina* (having eye-shaped marks), *Sudarśana* (good-looking), *Śalkin* (scaly[1]), *Samvara* (that which covers or spreads over).

Among the animals, frequently used by the king in war, hunting excursions and for joy ride, the elephant and the horse are the commonest. It is, therefore, natural that we find systematic works dealing with the taming, training and rearing of these animals and also with the treatment of their diseases. Besides elephant-lore and horse-lore we find veterinary science developed to a considerable extent in ancient India. The zoological knowledge of the Indians of those far-off ages is attested in the classification of elephants and horses and the description of signs for ascertaining their quality

The *Manu-smṛti* (i. 4) broadly divides worldly objects into *sthāvara* (non-moving) and *jaṅgama* (moving).

There is (i. 43-45) a broad division of the latter into *jarāyuja* (viviparous), *aṇḍaja* (oviparous) and *svedaja* (born out

1. The number of fishes, devoid of scales, is smaller.

of sweat) The first class comprises human beings and beasts. To the second class belong birds, serpents, crocodiles, fish, tortoises. The creatures of this class are sub-divided into *sthalaja* (growing on land) and *audaka* (aquatic) *Svedaja* are gad-flies, mosquitoes, lice, flies, bugs and others like ants which are born out of heat. The MP (1.31) divides moving creatures into four classes, viz. *Svedaja*, *aṇḍaja*, *jarāyuja* and *udbhijja*. The same Purāṇa classifies (237 1-2) the animal-kingdom under four heads, viz *āraṇya* (wild), *grāmya* (rural or domesticated), *jalodbhava* (aquatic) and *sthalaja* (growing on land). This Purāṇa broadly divides (39 112) animals into two classes, viz. quadrupeds, bipeds

Virtually the same classification is found in the VP (23 101, 69 298 f.f. etc.)

The same division of creatures is found in the *Caraka-saṃhitā* too (*Śārīrasthāna*, Chapter III) which adds *Udbhijja* (born of vegetable organisms).

Praśastapāda, in his commentary on the *Vaiśeṣika-sūtra*, divides creatures into two broad classes–*ayonija* and *yonija*. To the former class belong the small creatures which are generated without any sexual act. The latter class comprises those which are sexually generated. It is sub-divided into *jarāyuja* and *aṇḍaja*.

Small creatures (*kṣudrajantavaḥ*) are of several kinds according to the *Mahābhāṣya* (II. 4.1), viz. (1) animals without bones, (2) those devoid of own blood, (3) those minute ones more than a thousand of which can be contained in a palm, (4) those not easily crushed, (5) all animals up to ichneumons (in the animal series).

Suśruta adds *Saṃsvedaja* to the three classes mentioned by Caraka. It means those born of moisture and heat. As examples of this class are mentioned *kṛmi* (worm), *kīṭa* (insect), *pipīlikā* (ant).

The *Chāndogya Upaniṣad* (Prapāṭhaka, 6, pt. 3) divides creatures in accordance with the *bīja* (ovum or seed) These are (1) *aṇḍaja*, (2) *jīvaja* which is the same as *jarāyuja* above and (3) *Udbhijja*. Śaṅkara, in his commentary, states that *svedaja* creatures should be included partly under *jīvaja* and partly

under *Udbhijja* The idea seems to be that there cannot be generation without *bīja* and an inorganic matter without *bīja* cannot produce animal life. Patañjali, however, holds (*Mahābhāṣya*, 1.4 3) the contary view According to him, vegetable organisms like grass grow from inorganic matter As illustrations he points out scorpions which grow out of cowdung and *dūrvā* grass from heaps of the hairs of cows and sheep.

A fairly exhaustive classification is found in Umāsvāti's *Tattvārthādhigama*, a Jaina work (Chap. II, Sūtras 24, 34). The classification is primarily based on the number of senses possessed by the creatures concerned.

I. Those having the senses of touch and taste.

In it are comprised :

(i) *Apādika*—vermes without lateral appendages, scolecids

(ii) *Nūpuraka*—like rings, with pendants. Vermes with unsegmented lateral appendages, annelids.

(iii) *Gaṇḍūpada*—knotty-legged, arthropoda including Crustacea, Myriapoda, etc.

(iv) Certain types of Mollusca, e.g. *śaṅkha* (conch), *śūkti* (pearl-oyster) and *śambuka* (helix).

(v) *Jalūkā*—leeches, annelids.

II. Those having the senses of touch, taste and smell.

These include :

(i) *Pipīlikā*—ants (formicidae, Hymenoptera, Insecta)

(ii) *Rohiṇika*—red ants (Do).

(iii) *Upacika, Kunthu, Tuburaka*—bugs and fleas (Hemiptera and Siphonaptera Hemimetabola Insecta)

(iv) *Trapusabīja* and *Kapāsāsthika*—cucumber and cotton—weevils and lice (Aptera, Ameta-bola, Insecta).

(v) *Śatapadī* and *Utpataka*—spring-tails (Aptera, Ametabola). Centipedes (Chelicerata, Insecta)

(vi) *Tṛṇapatra*—plant-lice. Aphids, Homoptera, Insecta.

(vii) *Kāṣṭha-hāraka*—termites (white ants Isoptera, Hemimetabola, Insecta)

III. Those having the senses of sight, smell, taste and touch.

It comprises :

(i) *Bhramara, Varaṭa, Sāraṅga*—bees, wasps and hornets (Hymenoptera, Holometabola, Insecta).

(ii) *Makṣikā, Puttikā, Daṃśa, Maśaka*—flies, gnats, gad-flies, mosquitoes (Diptera, Holometabola, Insecta)

(iii) *Vṛścika, Nandyāvarta*—scorpions, spiders (Arachnida, Arthropoda).

(iv) *Kīṭa*—butterflies, moths (Lepidoptera, Holometabola, Insecta)

(v) *Paṭaṅga*—grasshoppers and locusts (Orthoptera Hemimetabola, Insecta)

IV. Those having the five senses of sight, hearing, taste, smell and touch

Besides human beings, this class includes.

(i) *Matsya*—fish

(ii) *Uraga*—apodal reptiles, including snakes (Ophidae).

(iii) *Bhujaṅga*—oviparous limbed animals (limbed reptiles and Batrachians).

(iv) *Pakṣi*—birds.

(v) *Catuṣpada*—quadrupeds

Of the above four main classes, the first three belong to the invertebrata class, and the fourth one to the Vertebrata.

The latter class is sub-divided into *aṇḍaja, jarāyuja, potaja* (placental mammals comprising the Deciduata excepting man, monkey and the carnivora).

Some works on Dharmaśāstra prescribe rules regarding the kinds of beasts, birds and fish that can be eaten especially by the upper castes, particularly Brāhmaṇas. Regarding beasts, the general rule is that, among the five-toed (*pañcanakha*) ones, the flesh of five species can be eaten Some would add more to this number. For instance, Manu (V 18) allows the flesh of the following as edible

Svāvidh
Śalyaka
Godhā
Khadga
Kūrma
Śaśa

The major works on Āyurveda also state beasts and birds of certain classes among those whose flesh can be eaten. The classification is based on the habitat and mode of life of these creatures. According to Caraka, these are

(1, *Prasaha*—carnivorous and non-carnivorous, comprising land quadrupeds and birds which fall on their food with speed.
(2) *Anūpa*—living in marshy lands or grazing on riverbanks.
(3) *Bhūśaya* or *Viłeśaya*—living in underground holes.
(4) *Vārišaya*—aquatic creatures.
(5) *Jalacara*—amphibious.
(6) *Jāṅgala*—living in dry and elevated jungle lands.
(7) *Viṣkira*—birds scattering their food while picking it up.
(8) *Pratuda*—birds pecking their food with beaks.

In the chapter on diet, Suśruta broadly divides creatures into two classes, viz. *Anūpa* and *Jāṅgala*. The former is sub-divided into five classes and the latter into eight. Thus *Anūpa* comprises *Kulecara, Plava, Kośastha, Pādina* and *Matsya*. *Kulecaras* are graminivorous quadrupeds living on the banks of rivers and ponds, and include the elephant, rhinoceros, *Gavaya*, the buffalo and various species of deer, etc. *Plavas* are amphibious birds. *Kośasthas* are shelled animals, e.g. *Śaṃkha, Śukti*, etc. *Pādinas* are aquatic creatures having pedal appendages, e.g. *Kūrma, Kumbhira*, etc. *Matsyas* are twofold, viz. those living in river-water and those living in sea-water.

The *Jāṅgala* class comprises the following :

Jaṅghāla—wild herbivorous animals which are strong-legged and flat-footed
Viṣkira—as above.
Pratuda—as above.
Guhāśaya—Carnivorous quadrupeds living in caves and hollows, e.g. the lion, tiger, wolf, jackal, etc.

the line, quoted by Mallinātha from the *Karṇodaya* under *Meghadūta* (I. 9, ed. Nandargikar, Bombay, 1894), it seems to have been a work on ornithology. From the quotations from the *Mṛgacarmiya*, found in his commentary on the *Raghuvaṃśa* (IV 39) and the *Śiśupālavadha* (V. 49), this work appears to have dealt with elephant-lore. The passages from the *Revatottara*, quoted in the commentary on the *Śiśupālāvadha* (V 60), appear to indicate that it was a work on *Aśva-śāstra*.

Of the authors, mentioned by Mallināth a, Cākṣuṣa, quoted from in the commentary on the *Raghuvaṃśa* (V 50), appears to have written on elephant-lore.

Elephant-lore

Richly dressed and marked with decorative designs on the forehead, the elephants formed attractive parts of royal processions. Sanskrit poems and dramas are replete with references to this lordly animal That the use of this animal was known even in the remote past is attested by the *Rgveda*. The *Rāmāyaṇa* (I. 6. 24) mentions several species of elephants. The Superintendent of Elephants appears to have been recognised, in the *Arthaśāstra* (II. 31 32), as an important dignitary under the king. Various matters relating to the elephant have been discussed in the *Bṛhatsaṃhitā* and the *Śukra-nīti* The poetical work, called *Yaśastilaka-campū*, by Somadeva, contains[1] some facts of elephant-lore Distinct treatises, dealing with this subject, were written Of them, the following two works only have been published hitherto

(i) *Hastyāyurveda*[2] of Pālakāpya,

(ii) *Mātanga-līlā*[3] of Nīlakaṇṭha[4].

As already stated, some of the DS refer to man-shaped (*vikṛta-rūpa*) species of fish like *Sarpaśīrṣa* (serpent-headed),

1. Kāvyamālā ed., I. p. 482.
2. Ed. Ānandāśrama Skt. Series, Poona, 1894.
3. Ed G Sastri, Trivandrum, 1910 Trs. into German by Zimmer, Berlin, 1929 Trs. into Eng. by F. Edgerton, New Haven, 1931
4. Keith appears to be wrong in attributing the work to Nārāyaṇa (*Hist of SKT Lit*, 1928, p. 465).

Manuṣya-śiras (having head like that of a human being). There is reference to those species which are carnivorous. Both the awkward shaped and the carnivorous species are prohibited as food

The *Rājanighaṇṭu* (a dictionary of medical terms) and the *Bhāvaprakāśa* (a work on Āyurveda) attribute certain medicinal properties to fish.

It is in the *Arthaśāstra* of Kauṭilya that we get, for the first time, ample information regarding fisheries. Thus it throws light on pisciculture and the rôle played by fish in that remote age. In Book IV, Chapter 3, the King is advised to provide food for the people by, among other things, fishing on a large scale in times of famine. In connexion with measures to be adopted in besieging a hostile kingdom Book XIII, Chapter V, suggests the following method. A flaming stick, fixed on the body of a dried fish, should be caused to be carried by a monkey, a cow or a bird to the thatched roofs of the houses ; this will scare away the inmates. From this it can be inferred that, in those days, invading armies used to carry dried fish among their provisions. While dealing with custom duties (Book II, Chap. 22) one-sixth of the value of dried fish is prescribed. This clearly points to trade in this commodity. In Book II, Chapter I, in connexion with the formation of a village, the King is asked to enforce his right of ownership over fishing in reservoirs of water.

The manure of small fish is prescribed for the growth of sprouts of seeds (Book II, Chap 24). Of the several regulations to be enforced by the Superintendent of Slaughter Houses (Book II, Chap. 26) the following relate to fish

(i) heavy punishment to be inflicted on a person killing or cruelly treating the fish declared to be under State protection and those growing in sanctuaries (*abhayāraṇya*).

(ii) punishable is the offence of killing or molesting those species which do not kill other animals.

(iii) of the fish caught, the Superintendent shall realise one-tenth or more as toll.

(iv) fish everywhere shall be given protection against molestation.

(v) those in sanctuaries, which become injurious, shall be killed outside the protected forests.

In Book II, Chap. 27, provision is made for realising from fishermen one-sixth of their haul as the fee for their fishing licence. They are, however, exempted from the payment of fees for fording or otherwise crossing rivers at any time and any place. In Book XIV, Chap. 1, the poisoning of fish in the enemy's kingdom is stated as one of the secret means of injuring the enemy. It is interesting to note that this process of poisoning is scientific, because by it the fish will not die but carry the poison so that people eating it will die. At one place, it is stated that the smoke, produced by burning the powder of fish, along with that of some other substances, causes blindness.

From the foregoing account, it is clear that fish played a very prominent part in the social and political life of the people. The extreme familiarity with fish is also proved by its metaphorical use. *Mātsya-nyāya* has been referred to above. In Book II, Chap. 9, of the *Arthas'āstra* we find government servants, surreptitiously accepting bribes, are compared to fish drinking water below the surface without the knowledge of anybody. In Book I, Chap. 21, the king is asked, as a safety measure, to enter such water as is free from large fish. From Book III, Chap. IV, we learn that fishermen used to travel with their women.

The latter being well-known in Kerala, the editor thinks that the author was a native of that region.

From the *Hastyāyurveda*[1] we learn that Pālakāpya was a sage so named because he used to rear up elephants and belonged to *Kapya-gotra*. We are informed that Pālakāpya narrated the science exhaustively to Romapāda, king of Aṅga, at the latter's request. The date of the work is not known.

Written in prose and verse, the work seems to be a compilation. At the end, it is called *Hastyāyurveda-saṃhitā*. The work is divided into four sections each of which is called

1. I. I 155.

Sthāna. These are *Mahāroga-sthana, Kṣudraroga-sthāna, Śalya-sthāna* and *Uttara-sthana*. Each *Sthāna* is sub-divided into several *Adhyayas* In the first section, there is a discussion on the fatal diseases of elephants and their remedies. In its *Adhyāya*, called *Roga-vibhakti*, the diseases are divided into two classes, viz *Ādhyātmika* (arising within the elephant's body) and *Āgantuka* (caused by an extraneous source, infectious). Of these diseases, 76 are *Vātaja* (caused by wind), 27 *Pittaja* (caused by bile) and 32 *Śleṣmaja* (caused by phlegm).

In the second section, many ordinary diseases and their treatment have been dealt with.

Elephant-surgery has been treated of in the third section. In this connexion, the following instruments have been mentioned : *Vṛddhipatra, Kūṭa-patra, Maṇḍalāgra, Vrīhi-mukha, Kuṭhāra-kṛti, Vatsa-danta, Utpala-patra, Śalākā, Sūci* and *Rampaka.*

The topics, dealt within the last section, are food and drink of elephants, flow of ichor, elephant-stall, description of various kinds of elephants, *nirājanā* of elephants, etc. In the thirteth chapter, called *Pāṃśudāna*, of this section, elephants have been divided into four classes—*āraṇya* (wild), *damyamāna* (under training), *danta* (trained) and *purāṇa* (old).

The *Mātanga-līla* is written in 263 verses divided into twelve chapters called *Paṭalas* The contents of the chapters are briefly as follows

I a legend on the origin of elephants, synonyms, with respective derivative meanings,[1] of the word 'hastin'.

II—good and bad signs. Some of the good signs are high tusk and backbone, red tip of the trunk, tongue and lip, nails numbering 20, *Svastika* or circular marks on the body, gait like that of a lion or deer Trumpeting caused by hunger, thirst or fear is ominous

III evil signs, e.g. more or less than the usual number of limbs, curved tail, extremely emaciated body

IV—signs helping the ascertainment of longevity. The following signs indicate long life Smooth tusk and nail, long ear and tail, auspicious mark.

1. E g *Nāga* (*na*+*aga*)—that which goes everywhere. *Gaja* (root *ji*)—that which defeats.

V—signs indicating age and different stages of life. Some stages of life and signs indicating them are as follows

Bāla—from birth to the first year of life; coppery colour, fondness for sucking, possession of undeveloped limbs.

Puccuka—second year of life, exceedingly red tongue, lip; too much fondness for sugar

Upasarpa—third year, mature nails, ears, etc., firm tusk.

Barbara—fourth year, fond of grass but averse to milk.

The span of an elephant's life is said to be 120 years.

VI—measurement of the elephant's body. Its height is from nails to the neck and length from the eye to the tip of the tail. In this chapter, we find the measurement of elephants of different classes and periods of life.

VII—valuation of elephants. If the left tusk is higher than the right, it causes decrease of value. Other defects also cause depreciation of value.

VIII—different types of the nature of elephants and their external signs. According to their nature, elephants are divided into several classes, e.g. *Deva*, *Dānava*, *Gandharva*, etc. Elephants possessing good look and sweet smell belong to the *Deva* class. Those of the *Dānava* class are fond of fight, malodorous and killers of other animals. The *Gandharva* type of elephants is fond of music, their gait is charming and tusks and temples are very beautiful. Elephants have also been divided into the four well-known castes. Those which are peace-loving, sweet-smelling and fond of bath are Brāhmaṇa. The Kṣatriya is undaunted in fight. Elephants of the Vaiśya class are painstaking, fond of fish and their anger is easily pacified. Śūdra elephants are fond of smelling, irritable, timid and eat the remnants of food. Elephants of the *Deva*, *Kṣatriya*, *Brāhmaṇa* and *Gandharva* types are *Rājasika*; all other types are *Tāmasika*. Elephants may be of the following colours—tawny, yellow, black and white. Of these, only black ones are found on earth.

IX—flow of ichor due to excess of joy or excitement. When ichor flows, the elephant's cheeks become moist, it trumpets like a cloud and wants to break away from the place where it is tied. In such a condition, it should be given pills made of the barks of the trees called *Sahā* (*Aloe perfoliata*), *Madhūka* (*Bassia latifolia* or *Tonesia asoka*), *Śālmali* (*Bombak heptaphyllum* or *Salmalia malabarica*) mixed with honey and milk

X Five methods of capturing wild elephants These are briefly as follows :

About two miles of land should be surrounded by strong trees and sugar-canes and other tempting articles are to be placed within the enclosure. The land will be entrenched by a moat difficult to cross. On one side of the enclosure, there will be a door with a very strong door-leaf raised. The elephants will be driven into the enclosure by scaring them with beats of drums, etc. As soon as the herd enters into the enclosures, the door-leaf will be lowered and closed. After this, the people, engaged for this purpose, will enter into the enclosed space with tame elephants, ropes, spears, goads and chains. Cautiously and skilfully they will put the chains on the legs of the wild elephants.

Another method is this. Drivers of five or six tame female elephants taking ropes, etc., with them will hide themselves under leather with which the animals will be covered. In this way, they will take the elephants, and by tricks each of them will tie up one wild elephant with ropes. The female elephants, bathed in cold water mixed with the barks of certain trees, e.g. *Kāleyaka* (*Curcuma xanthorrhiza*), *Māleya*, etc., become fit for enticing male ones.

A third method of capturing wild elephants is as follows. By beat of drums and other instruments wild elephants will be scared. While they start running, they will be chased by people. When the baby

elephants, through exhaustion, will be almost lame, they will be skilfully enchained

A fourth device is this. Nooses of ropes will be laid on earth and covered with banana plants, sugar-canes and such leaves of trees as are liked by elephants. People will remain in hiding nearby When the elephants, attracted by banana plants, etc., will start eating them the noose-ropes will be drawn and the animals made to fall down.

The last means of capturing them is this. A pit, four cubits deep, two cubits wide and five cubits long, has to be dug. On it will be kept food for elephants. Baby elephants, attracted by food, will come there and fall into the pits Thus they may be captured

The last two methods, particularly the last one, have been condemned for the reason that the elephants may be injured or even killed.

XI—maintenance and food of elephants. The newly captured elephants are to be bathed in cold water daily in the morning and evening. Daily supervision of the place for the elephant's lying down, exercise and medicine, etc., is necessary Lotus-stalk, banana plant, grass, fig tree, sugar-cane, leaves and fruits of the banyan tree, bamboo-leaves, cooked and uncooked rice—these are the favourite and beneficial food of elephants. Application of ghee is efficacious for their eyes and tusks. Intake of adequate salt is an immediate cure for their worms and loss of appetite. Rheumatism and cough of elephants are counteracted by oil mixed with grass, *Vaca* (*Acorus calamus*?) garlic, salt and ginger, etc. Different seasons. The treatment of some elephant-diseases like fever is similar to that of the same diseases of human beings.

XII—qualifications and disqualifications of the driver and superintendent. The latter will be like the king, intelligent, pious and endowed with other qualities. The driver must be an adept in climbing up and down the elephants and in the treatment of their diseases.

Nīlakaṇṭha : Mātaṅgalīlā, ed. G. Sastri, Trivandrum, 1910. Translated into English by Edgerton, Yale, 1931 ; into German by Zimmer, Berlin, 1929 (Acc. to Keith, the author of this work is Nārāyaṇa. See A B. Keith, *History of Sanskrit Literature*, 1930, p. 465).

Pālakāpya : *Hastyāyurveda*, Poona, 1894. (The anonymous Ms. No. 12295, of unknown authorship, preserved in Sarasvati Mahal Library, Tanjore, deals with this subject).

EQUESTRIAN SCIENCE

That the Indians knew the use of this animal in hoary antiquity is attested by the *Ṛgveda*. The *Aśvamedha* sacrifice was a great event in the political life of India. The horse was used for many purposes, e.g., drawing the plough, carts and chariots, carrying mails and soldiers in battles. It was also used as a mount in hunting. Cavalry formed an important part of the military set-up. Caparisoned horses added to the grandeur of processions. In the *Arthaśāstra*, we find that the superintendent of Horses (Aśvādhyakṣa) was a notable dignitary in the royal service. It is no wonder, therefore, that treatises were written exclusively dealing with the horses. Such treatises are broadly of two classes. One class of works discusses the breed, the good and bad signs of horses. In those of the other class, various diseases of horses and their treatment have been dealt with

The Aśva-śāstra[1] is the only work published so far, belonging to the former class of works. The manuscript, on which the edition is based, contains pictures of twenty-one horses of different types. It is attributed to Nakula who appears, from the fourth and fifth verses, to be identical with Nakula, one of the five Pāṇḍava brothers of the *Mahābhārata*. The date of

1. Ed. S. Gopalan, Sarasvati Mahal Library, Tanjore, 1952. In the preface, the editor observes that there are many Mss. in the library dealing with horse-lore.

the work is unknown That it is a compilation, and not an original composition, is mentioned in verse five of the work. It seems that the author, with a view to imparting a halo of authoritativeness and antiquity, associated the work with the name of the well-known Pāṇḍava whom legend makes a physician of horses

The topics, dealt within the work, are briefly as follows :

Vāji-praśaṃsādhyāya—after salutations to Gaṇeśa and other deities, the authorities on horse-lore are mentioned , the authorities are the sun, the moon, sage Śālihotra, Suśruta, Garga, etc. In course of the eulogy of horses, it has been observed that it is indispensable in battle , in fact, the world can be brought under control by means of horses (*asvair-hastagatā pṛthvī*). The horse is fearless, loyal to its master and fast-running Capable of enduring hunger and thirst, the horse can be used in all seasons.

Raivata-stotra -Raivata is said to have been born of the union of the sun and *Chāyā*. It is stated that no harm is caused to the horses of one who remembers, in the morning, the 28 names like Raivata, Pārthiva, etc.

Praśnādhyāya—It has been said that, in times of yore, horses, endowed with wings, used to fly with Gandharvas At Indra's request, Śālihotra clipped their wings. Thus they became useful to mankind.

Pradeśādhyāya,

Aṅgalakṣaṇa-prakaraṇādhyāya,

Aśvalakṣaṇo-podghātādhyāya—before selection of horses, their appearance, formation of body and signs are to be examined. Those with inauspicious signs should be rejected Particularly condemned are those having inauspicious signs in the lips, face, nose, etc. The following are some of the good signs :

red colour, soft and hairless lips, delicate sides of the face, stout neck, etc.

The longevity of a horse is 32 years ; this period is

divided into ten stages the duration of each of which is three years, two months and twelve days

The body of the horse is divided into the following ten parts :

from the nose to the forehead head to neck, neck-mane-shoulder, chest-hump-sides, fore-part of the body, side of the heart and flanks, belly-spine, private parts, thigh-knee-hip, shanks with hoofs.

Āvartādhyāya—the hairy marks, found on the body of some horses, are called *āvarta*. These may look like the moon, a triangle, arrow, etc. Marks of other forms also are sometimes found These are oyster, knotty formation, bud, tongue, *śatapādi* (?), *pādukā*, *pādukārdha*, lotus, bow, fish, etc. The *āvartas* can be classified as *Dhruva*, *Nindya*, *Śubha* and *Aśubha* If the *Śubha* and *Aśubha* are found together, the latter should be burnt off with heated gold, then the evil effect will be removed.

Miśrita-lakṣaṇā-dhyāya—horses of the best kind are possessed of the following characteristics, white all over, whiteness of particular spots, e.g. hoof, face, well-built body, graceful gait. Horses of some mixed colours are best, e.g. red or dark colour of the body with white ears, hoofs, faces and legs, etc. Certain mixed colours are bad, e.g. dark hoofs and white legs.

Puṇḍra-lakṣaṇā-dhyāya—*puṇḍra* is the designation of a white mark below the ear but above the nose. *Puṇḍras* of the following shapes indicate the future acquisition of wealth and victory on the part of the owner of the horse

lotus-petal, pitcher, plough, flag, goad or hook (*aṅkuśa*), Bel tree, conch-shell, umbrella, *Svastika* mark, etc.

Black marks and marks of the shape of chains forebode evil. Similar is the case with *puṇḍras* on particular places, e.g. lips, left side of the face. A mark on the forehead is called *lalāma*. *Lalāmas* of the shape of the moon, crescent, the sun, stars, etc.,

are auspicious. *Lalāmas* looking like *paṭaha* (drum) or *Kāka-pada* (crow's foot) are inauspicious. Marks on head, ear, hump, etc., of a single-coloured horse are also called *lalāma*. Such *lalāmas*, if white, are auspicious. Marks of varying colours on different limbs of such a horse are regarded as inauspicious.

Puṣpa-lakṣaṇa—certain marks appearing on the body of a horse and disappearing after sometime are known as *Puṣpa*. These marks on particular parts of the body are auspicious while, on others, they are inauspicious.

Heṣita-śubha-lakṣaṇa—the neigh of a horse at the sight of a Brāhmaṇa, a jar filled with water, etc., is auspicious. The neigh of horses, which are too young, too old, tired, afflicted with hunger or thirst, is of no consequence. Inauspicious is the grunt of a hog, howl of a jackal or the bray of an ass.

Gandha-lakṣaṇa—auspicious are the horses the smell of whose body is like that of lotus, sandal, etc. Inauspicious are those which smell like a camel, ass or tortoise, etc.

Chāyā-lakṣaṇa—as the cloud covers the sun, so reflection covers the horse's body. The reflections are of five kinds, viz.

(i) *Pṛthvījā*—of different pleasant colours.

(ii) *Varuṇī*—this is of water and looks like cloud.

(iii) *Saurī*—like the rising sun.

(iv) *Vāyavyā*—arising from wind.

(v) *Nābhasī*—arising from the sky.

These reflections are visible when the horse drinks water, eats grass or falls asleep.

Gati-lakṣaṇa—the gait of the horse, in which the strides are uniform, and which is pleasing to the eye and mind, is auspicious. The horse, whose gait is like that of a peacock, bull or tiger, causes good to the master. The horse, which jumps or kicks while going, forebodes evil.

Sattva-lakṣaṇa—the nature of horses may be *Sāttvika*, *Rājasa* or *Tāmasa* each of which has the following sub-divisions.

Sāttvika

(i) *Brāhma*—devoid of passion and anger and endowed with good memory.

(ii) *Ārṣa*—free from jealousy, disease and delusion.

(iii) *Aindra*—*spirited*.

(iv) *Yāmya*—free from illusion.

(v) *Kauvera*—possessed of good memory, passionate and having manifest joy and anger.

(vi) *Vāruṇa*—playful and heroic.

(vii) *Gāndharva*—fond of music.

Rājasa

(i) *Āsura*—haughty and irate.

(ii) *Rakṣasa*—fond of sleep and gluttonous.

(iii) *Paiśāca*—timid and gluttonous

(iv) *Sārpa*—irascible.

(v) *Paitra*—wicked and timid.

(vi) *Śākuna*—gluttonous and frowning.

Tāmasa

(i) *Pāśava*—timid, lazy and dull-witted.

(ii) *Mātsya*—gluttonous, timid and fond of water.

(iii) *Vairudha*—lazy and sleepy like a creeper

Mahādoṣādhyāya—the following signs of a horse are inauspicious : dark colour, short, broken or unequal teeth, possessing more or less limbs than usual, etc. The horse that has carried a corpse or smells like burnt leather is to be rejected.

Tālu-raṅgādhyāya—the *tālu* (palate) may be of different colours of which the red one is auspicious ; all other colours are inauspicious.

Kula-lakṣaṇādhyāya—54 species of horses are mentioned here.

Some of them are :

Araṭṭaka, Āvantya, Dārada, Dākṣiṇeya, Gāndhāra, Kāmboja, Kāśmira, Kālinga, Mālava, Mādhura, Māgadha, Pārvatiya, Saindhava, Sauvira Saurāṣṭra, Vanāyuja. Some of the species are said to have sub-species.

Vayojñāna—from certain internal and external signs the age

of a horse can be determined. A few examples may be given. Age can be ascertained from the colour and shape of the teeth. For instance, slightly grown teeth indicate the first month of age. The complete set of teeth, if fully developed, indicates seven months. When all the teeth are white, they indicate that the age is within one year. A horse, devoid of all the teeth, is to be taken as thirty-two years old

Varṇa-lakṣaṇa—the colour of a horse may be white, red, dark, green or variegated. The following are the designations of horses depending on the colour of their limbs and hairs: Sāra, Karka, Kukkuṭa, Kraunca-patra, Sindhu-vāraka, Añjana-keśaka, Śuka-romaka and Śvetākeśika.

Horses of different colours are associated with the names of certain deities. For example, the moon's horse is white, Indra's horse is green and so on.

Rājavāhadhyāya—The horses, suitable for kings are white, dark, red or variegated. They will have well-built body, graceful gait, auspicious *āvartas* and *lalāmas*. Horses suitable for various purposes are classed as follows :

Paramāśva—suited to gods. These are prohibited as mounts and are to be worshipped.

Abhiṣecanika—the king should ride it in coronation.

Kṣatriyāśva—suitable for Kṣatriyas.

Sānnāhya—useful in war.

Aupavāhya—fit for riding.

Each of these classes has certain characteristics.

Āyur-lakṣaṇādhyāya—the longevity of horses can be gauged from certain signs. For instance, short ears, sweet voice, broad chest, etc., indicate long life. A horse, with the forepart of its body stooping, does not become long-lived.

Utpāta-prakaraṇadhyāya—certain signs on the body of a horse and its different activities are inauspicious. For example, its striking the earth with its left foot shows that the journey will not be beneficial. If the horse's

body is hot like fire, it forebodes drought for one year.

Vāhana-śikṣādhyāya—in matters relating to their training, horses are divided into the following classes :

Brāhmaṇa—timid and greedy

Kṣatriya—spirited and courageous.

Vaiśya—wild and wicked

Śūdra—rude, timid and cruel

In accordance with the nature of horses, they should be trained by *Sāma* (conciliation), *Dāna* (gift) and *Daṇḍa* (punishment). The place of training shall be free from stones, soft and dry. A man, who is corpulent or irascible or beats the horse for nothing, is unfit for training a horse. The trainer should be patient, cautious and skilled in riding; he must have knowledge about the nature and mind of the horse. For the faults of the horse, it should be beaten at certain stated parts of the body. For example, for too much neighing it should be beaten on the knee; for straying away it should be hit on the face. Beating at improper places results in bad training.

Dhārādhyāya—the gait (*dhārā* or *gati*) of a horse may be as follows

(*i*) *Vikrama*—ordinary gait.

(*ii*) Pulaka (?)

(*iii*) Pūrṇakaṇṭhi—moving with the face upright.

(*iv*) *Tvaritā*—moving fast of its own accord.

(*v*) *Nirālambā*—moving after being beaten.

Āroha-vidhānādhyāya—the rider shall sit steadily, and must not swing or look at the ground. He should slightly spur the horse. While mounting, he should use the right foot first. *Tithis* and *Nakṣatras*, auspicious for riding, are mentioned and the author states some incantations to be used by the rider. At the end of the work, the following information has been incorporated. It has been obtained from Malladeva's *Sārasindhu* or *Śālihotra Vaiśampāyanīya*, a manuscript preserved in Tanjore Sarasvati Mahal Library.

Horses of the following descriptions are to be rejected : blind, deaf, dumb, dull, impotent, *Kumārikā*, i.e. a mare which

refuses to associate with a male horse. There are certain indications from which such horses can be known. For example, the horse which gazes at the sky and jumps on even land shall be taken as blind. A horse, that looks at another direction when called, is deaf Incidentally, the measurement of the limbs of the best and worst horses is also stated

Coming to the psychology of horses, we are told that a horse is scared at the sight of an iron rod. Horses are delighted at the time of eating, coronation, at the sound of bells (*ghaṇṭā*) and when they get good riders. They feel disgusted if the riders beat them for nothing or hang on their necks.

Then we get a list of the appurtenances of the horses. These are as follows :

Kośā (whip)—it must be soft, round and covered with goat's skin.

Pāna-nalikā (drinking vessel)—made of bamboo, it is of the shape of a horse-ear. Water and milk are given in it for drinking.

Akṣimālā—leather-cover for the horse's eyes to prevent mosquitos and gnats.

Khuratra (for covering the sides of hoofs)—made of iron. This prevents the erosion of hoofs, and appears to correspond to the modern horse-shoe.

Khalīna (bit)—it must be soft and made of iron or ivory. Its measurement will be in accordance with the side of the horse's mouth.

To the second class of works, referred to above, belongs the *Aśva-cikitsita*[1] attributed to Nakula. It is in eighteen chapters. The following topics appear to be dealt within it. Knowledge about the teeth of horses, measurement of limbs, speed, method of riding, castes of horses, their colour, classification, maintenance in different seasons, good and bad signs, diseases and remedies, rules about stables, etc.

Another work of this class is called *Aśva-vaidyaka*[2] written by Jayadattasūri, son of Vijayadatta. In the chapter-colophons,

1. Ed. Bibliotheca Indica, Calcutta, 1887
2. Ed. Bibliotheca Indica, Calcutta, 1887.

the author is styled *Mahāsāmanta*. Its provenance is unknown. From certain internal evidences, the author is supposed to have flourished later than the thirteenth or even the fifteenth century AD.

It is written in 68 chapters. From certain statements in the work, it appears to be a compilation. In addition to the topics, mentioned above, it deals with remedies against the barrenness of horses and their suitable fodder. The horses of the *Tājika* class are regarded as the best. Of the diseases of horses, mentioned in it, some are *Vraṇa* (scar), *Śūla* (pain), *Kuṣṭha* (leprosy), *Śotha* (dropsy), *Arśa* (piles) and *Unmāda* (insanity). Of the various herbs, mentioned as curing the diseases of horses, the following are important and well-known :

Aguru—*Aquilaria agallocha*.
Ahiphena—Opium.
Āmalaka—*Phyllanthus emblica*.
Apāmārga—*Achyranthes aspera*
Arjuna—*Pentapetra arguna* or *Terminalia arjuna*.
Atasi—*Linum usitatiesimum*.
Dhattūra—*Datura fastuosa*.
Eranda—*Ricinus communis*.
Guggulu—*Burse raceae*.
Harītaki—*Terminalia chabula*.
Hiṅgu—*Ferula assafoetida*.
Kaṇṭakāri—*Solanum jacquinti*.
Karavīra—*Nerium odorum*.
Kulattha—*Dolichos uniforus*
Laśuna—*Allium sativum*.
Nimba—*Azadirachta indica*.
Paṭola—*Trichosanthes dioca*.
Pippali—*Piper longum*.
Raśona—Same as *Laśuna* above.
Saptapatra—*Alstonia scholarsis*.
Tulasi—*Ocimum sanctum*.
Udumbara—*Ficus glomerata*.

1. E.g. i 3, vii. 1.

It is interesting to note that a work, entitled *Aśvāyurveda*, is ascribed to Vāgbhaṭa. It is still unpublished.[1]

ORNITHOLOGY

The ornithological knowledge of the Indians of old is borne out by the single work, entitled *Śyainika-śāstra*. Birds of various kinds are, however, mentioned in several works. The work is attributed to Rudradeva, or, according to some Mss., Candradeva or Rudracandradeva. Of him we know nothing beyond the fact that he was king of Kūrmācala or Kumaon.

The date of the work is unknown. The occurrence of some Turkish words in it does not necessarily indicate that it was written in a period later than the invasion of India by the Turks; because, long before this invasion, Indians had commercial contacts with the Turks. It has been ingeniously suggested by H. P. Sastri that the work appears to have originated at least three hundred years earlier. This is because, although the work mentions various arms and ammunitions in connexion with hunting, gun and gunpowder are conspicuous by their absence. Sastri further holds that it could not have been composed in the pre-Muslim period, because, the author wrote a Smṛti digest called *Trāivarṇika-dharma-nirṇaya* and Smṛti digests were composed in the wake of Muslim occupation. This view, however, is not sound for the simple reason that the digest-makers like Bhavadeva, Aniruddha and Halāyudha wrote their works in the pre-Muslim period. Sastri points out that the author of the work quotes Kullūkabhaṭṭa's observations. Kullūka is believed to have flourished about the middle of the thirteenth century which, therefore, is the upper limit of Rudradeva's date.

It is interesting to note that, although the title indicates the contents to be about *Śyena*[2] (falcon or hawk) only, yet

1. MS. No 581 of 1899–1915 belonging to Bhandarkar Oriental Research Institute, Poona. Date of copy–1651 AD. See P. K. Gode, Instructions regarding horse stables, *Madras University Journal*.
2. *Śyainika* is derived from *Śyena*.

some other matters are dealt with in it. The work consists of seven chapters which are called respectively

I. Karmānusañjana
II.—Vyasana-heyatā-nirūpaṇa | —discussion on *Vyasanas* (vices).

III.—Mṛgayā-vivecana—praise of hunting and description of eight kinds of hunting.

IV.—Śyenānāṃ vivecanam—kinds of hawks, their description and maintenance.

V.—Cikitsādhikāra—various maladies of hawks and their treatment.

VI.—Śyenapāte-tikartavyatā—description of hawk-fight and the pleasure derived from it.

VII. Mṛgayānantare-tikartavyatā—description of the ways of king's rest after hawk-fight.

The contents of the work are briefly as follows. The eight so-called vices, arising out of wrath, and the ten, originating from passion, are not vices as such, unfettered addiction to them is vicious[1]. The author holds that one taking to them within reasonable limits derives pleasure whereas total abstinence from them stands in the way of the fulfilment of the purpose of life in many respects. For example, if a man completely abjures the company of women then how can he get a son? If killing of animals is shunned, then meat even for sacrificial purposes cannot be obtained. Day-sleep, though condemned, is conducive to health on the part of one suffering from indigestion.

According to the author, hunting is of many kinds of which he describes the following eight.

(*i*) *Āśvinā*—hunting from horse-back.

(*ii*) *Sajālā*—hunting with noose or snare

(*iii*) *Kālyā*—hunting with various tricks.

(*iv*) *Yāvalī*[2]—hunting animals after ascertaining their movement by observing the shaking, etc., of crops in the field.

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1. For the enumeration of the vices, see *Manu-smṛti*, vii. 47, 48. *Mṛgayā* (hunting) is included in the latter group.
2. It appears to be derived from *yavasa* (fodder) so that *yāvasī* seems to be proper spelling.

(v) *Sāpekṣā*—hurling weapons at the target after waiting.

(vi) *Padaprekṣā*—hunting by following the footprints.

(vii) *Śvagaṇikā*—hunting by setting dogs on the target.

(viii) *Śyenapātā*—hunting with hawks.

The best season for *Āśvinā* type is the period between the middle of winter and the middle of Jyaṣṭha. Places devoid of mud, stones, trees and holes are best suited for it. As a result of this kind of hunting, the body becomes light, strong and devoid of fat, it engenders the capacity for withstanding hunger, thirst, cold and heat. By this one can master the art of bagging moving objects. This form of hunting leads to the acquisition of both *dharma* and *artha*. *Dharma* is acquired by killing ferocious animals and those destroying corns, by protecting forests serving various useful purposes, by removing thieves, etc., and by getting opportunities of cultivating friendship with the people living in forests. Hunting leads to the acquisition of wealth by affording opportunities of obtaining wild elephants, rhinoceroses, costly horns, and leathers, musks, etc. By such hunting one can get such flesh of animals as excites sexual passion and helps in sexual gratification. Thus, this type of hunting leads to the attainment of the three, viz., *dharma*, *artha* and *kāma*, out of the four ends of human life.

By means of *Sajālā mṛgayā* one can collect fish, conch-shells, oysters, etc. Niṣādas and other low-class people take to this form of hunting. It is suitable also for kings as elephants can be caught by this means. Capture of deer with deer and birds with birds also come within the purview of this type.

Kālyā mṛgayā is of four kinds, viz.,

(i) *Bahu-karṇikā*—in it two or three persons together turn towards the wind, shout at the top of their voice and pierce deer with three-pronged spears.

(ii) *Mūla-lagṇikā*—in this form, many people, hidden behind trees, advance gradually and kill animals from behind.

(*iii*) *Mahā-kālyā*—in this type, many people surrounding a forest gradually advance, block the ways of escape and kill animals with swords or other weapons.

(*iv*) *Gaja-kālyā*—in summer, elephants are captured when they fall into pools which are almost dry.

In the *Yāvasī* type, animals hiding in the fields of wheat, etc., are killed after ascertaining their movements from the shaking of the plants.

In the *Sāpekṣā* type, the archers lie in wait, and as the animals come near by they pierce them with poisonous shafts. This form of hunting is suitable at places abounding in *Bibhītaka* trees (*Beleric myrobalan*) and crops and also in the vicinity of tanks. Ferocious animals like lion can be easily killed in this manner by keeping in front the carcasses of cows.

Padāprekṣā mṛgayā is twofold. In one type, the hunter traces the target by following the footprints of the dog set against it and then kills it. In the other form, the archer himself follows the footmarks of the animal to be killed. This form is suitable in a sandy or moist spot.

In the *Śvagaṇikā* type, some dogs are set against hares and the like. When those animals are engaged in fighting with the dogs, the archer discharges arrows at the target. It requires a deft hand, because the arrow will hit the target only and not the dogs. *Rajjvamoka* is a variety of this type, in this, a deer is captured by skilfully spreading ropes.

In the last-mentioned form, trained hawks, let loose, fall upon other birds. The hawks can be released in two ways :

(*i*) *Hastāmoka*—the rope, tying the leg of the hawk, is held in the finger, and the bird is thrown towards the target.

(*ii*) *Muṣṭimoka*—the hawk is placed on the palm, its feathers being wrapped in a piece of cloth. Then it is thrown off. One has to see that the piece of cloth does not obstruct its flight.

The method of training hawks is amusing. The trainer's primary duty is to create the bird's confidence in himself. With this end in view, as soon as he gets a hawk he will shut its eyes in such a way that it cannot see his face for five days. Care must be taken to ensure that it cannot even hear his voice within this period. After the lapse of this period, its eyes are to be opened and washed with cold water. Thus, its confidence is to be gradually engendered. He will himself give food and drink to it and fondle it. Punishment is also ordained for those hawks which cannot be easily tamed.

Hawks are broadly of two kinds, viz. *Kṛṣṇākṣa* (dark-eyed) and *Pāṭalākṣa* (red-eyed). To the first class belong those called *Kuhī*, *Śaśāda* (Hare-hawk), *Caraka* (Saker-falcon), *Vaharī* (Peregrine), Lagar (Lugger falcon), *Pakṣa-kalikā* and *Turumatī* (Merlin). Those belonging to the second class are called *Vāja*, *Vāsa*, *Vesara*, *Sīcāna*, *Jura*, *Ceta*, *Dhūtī*, *Ṭuna*. The author holds that, in both the classes, the females have greater courage and a more graceful gait.

According to the author, though *Vāja* is a generic name of birds, yet, by usage, it denotes hawk. *Vājas* are of five kinds :

(i) *Balākā*—having a frail body and white and dark feathers on the chest and the thigh.

(ii) *Cakrāṅga*—looking like the *Cakravaka* bird.

(iii) *Kālaka*—long and dark like the *Kaṅka* (heron).

(iv) *Haṃsa-vāja*—having a snow-white body.

(v) *Maha-rāvaṇa*—in its tail and feathers there are signs like the leaves of the *Aśvattha* or *Pippala* tree. It is looked upon as the king of *Vājas*. It is called Rāvaṇa because, at its approach, other birds are terrified and cry loudly.

Vāsas are of four types :

(i) *Auraṅgaṇa*—it is of various kinds in accordance with strength, courage and colour.

(ii) Those having frail forms and moving fast.

(iii) *Pratiṣṭhāna*—having thick feathers. Its courage and speed of movement are inferior.

(iv) *Śikāra*—exceedingly courageous and fast-moving.

Vesaras are of three kinds

(i) *Māṇika*—corpulent and possessed of inferior qualities.

(ii) *Cūlikānka*—possessed of medium qualities.

(iii) *Vasapratima*—possessed of best qualities, its courage and tail are like those of the *Vāsa* mentioned above.

Of the above birds, those having heads like serpent-hoods, long necks, widespread wings and broad chests are the best. Their body looks like the *Svastika* sign

Varying quantities of food are prescribed for different classes of hawks. Fresh flesh weighing twenty-five *taṅkas*[1] is to be given each to *Kuhi*, *Caraka*, *Vāja*, *Vahari* and *Śaśāda*. Their males are to be given fives *tankas* less. Fifteen, thirteen and eleven *ṭankas* respectively are prescribed for *Pakṣakalikā*, *Vāsa*, *Vesara* and *Cūlāṅka*. The quantity of food for the *Sicāna* will depend on its capacity Nine *ṭankas* are fixed for *Turumatī*. To the *Ceṭa*, *Ṭuna* and *Dhūtikā* are to be given respectively eight, seven and six *tankas*

The maintenance of a hawk is not an easy job. After tying it up, it should be placed in a white-washed room atop the palace. That place must be kept cool by spraying water and occasionally by means of fans. It is to be enclosed by a net so that flies cannot get in. The hawk may be kept in a shaded and well-protected spot in the garden or in a cellar free from mosquitoes, etc. There also water is to be sprayed. The cellar should be surrounded by green sprouts of barley and perfumed. Not more than two or three hawks should be kept together.

Before the hawk a pot of water should be kept for its bath.

Treatment is prescribed for various diseases of hawks. Pulverised *Methi* (fenugreek), mixed with buffalo's butter, is to be administered to a hawk vomiting out its food. Only pulverised *Vahni*[2] or *Vahni*-powder, mixed with the juice of

1. 1 *ṭaṅka* = 4 *māṣas*
2. The meaning is not clear. A species of plants appears to be so called. H. P. Sastri translates it as marking-nut.

hemp, as well as tepid water, is the medicine for indigestion. As an antidote for emaciation is prescribed a mixture of flesh and butter obtained from *Strī-stanya*[1] or cow's milk. Cloves or flesh, mixed with human wine, are to be administered for curing loss of appetite.

In the rainy season, hawks shed old feathers and grow new ones. If this is delayed, it should be given the flesh of *Śaraṭa*.[2] If the hawk's feathers start being worm-eaten, then the remedy is equal quantities of *Viḍaṅga* (*Embelia ribes*), *Vahni* and *Kastūrī* (musk)

The general name of the breathing diseases of hawks is *Śākhā*. It is of four kinds :

Abhighāta-samutthā, *Ślesmajā*, *Pittajā*, *Kṣaiṇyajā* (consumption). The last-mentioned disease is also called *Śoṣitā*, and is the most dangerous. Medicines are prescribed as curing all these forms of the disease. The antidotes of *Śoṣitā* are of various kinds :

Flesh of *Kalaviṅka*[3] soaked in human blood,
fresh flesh of *Caṭaka*,[4] boar's flesh or
bird-flesh mixed with cow's butter.

Occasionally a mixture of camphor and water is also prescribed.

Sometimes, white spots are visible inside the eyes of the hawk owing to heat, smoke or injury The medicine in such a case is the powder of the roots of *Cāṅgerī*.[5] An alternative is pills made of equal quantities of *Haridrā*, *Nimba-patra*, *Marica*, *Harītakī*, *Pippalī* and *Musta* (*Cyperus rotundus*) and *Viḍaṅga*; the pills are to be soaked in the urine of she-goats.

At times, due to fault of food and drink, inflammation is found in the mouth of the hawk, this happens owing to

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1. Goat's milk, acc. to H P. Sastri. From the commentary it seems that it may denote also the milk of a woman.
2. Same as *Kṛkalāsa*.
3. Sparrow or Indian cuckoo.
4. *Caṭaka* is not Śyāmā, as some think, but pied crested cuckoo (*clamator jacobinus*).
5. *Oxalis monadelpha*.

phlegm or bile. The remedy against swelling, caused by bile, is the eating of flesh with the pulverised bark of milk-exuding trees mixed with sesamum oil. The oil may also be used as an ointment. Other medicines are prescribed for curing the inflammation caused by other factors.

Boils or swellings are occasionally found on the legs of the hawk. This disease is called *Gardabhī*. If prolonged, it is called *Candī*. The remedy against the former is the daily application of the juice of the *Pippala* and the *Udumbara* tree over the affected spot, this should be continued for a week. Application of *Vīṭ* (?) is an alternative measure. For curing *Cāndī*, at first a leech is to be placed on the affected spot. Then turmeric, mixed with butter and rocksalt, are to be applied over the sore, and it is to be bandaged with a piece of cloth. After every three days, the old medicine and bandage are to be replaced by new ones. Treatment for twelve days cures *Cāndī*.

Loss of strength and change of colour are sometimes visible in a hawk which is wounded. The medicine in such a case is a mixture of equal quantities of two kinds of *Haridra*, *Tutthaka* (Blue Vitriol), *Bhārgī* (*Sithonanthus indica*), *Madana* (*Vangueria spinosa*), milk of *Arka* (*Calotropis gigantea*) and ghee.

Hawks suffer from worms by eating stale flesh or flesh that is difficult to assimilate. The worms are destroyed if a mixture of two-thirds *Viḍaṅga* and one-third *Kastūrī* is administered.

For want of bath, small insects grow on the body of the hawk. The remedy in such a case is the dusting of the powder of *Māgadhī* (long pepper). An alternative measure is the ointment of the pulverised bark of the root of Bel tree mixed with cow's urine.

As stated above, in the last two chapters of the work are described hawk-fight, the pleasure derived from it and the means of king's relaxation after witnessing the fight.

Varana—that which prevents hostile kings.

Sindhura—(Sindhu & ram) that which is delighed in a river.

BEASTS

Airāvata (Airāvaṇa)
Name of Indra's elephant. *Elephas maximus* Indian elephant.
Ādi vi. 26b
Ayo xii. 33b.
Ara xxxvii. 8b.
Sun ii. 29a, xii. 31a, etc.
Yud xxviii. 17b, xl ix. 5b.
Utt xxxi. 5a, xxxviii. 95a, 96a.

Aja
Goat. *Capra hircus*. (The wild goat)
AV vi. 71. 1, ix. 5. 1
S. B 12. 7. 2. 7.
G VII. 15, XII. 22, XVII. 21.
B I. 12. 4, II. 3. 9, 6. 34.
Vas XIV. 35, XXVIII. 9.
Pan IV. 1. 4, 2. 39.
Ādi xvii. (4a)
Ayo C. 63a, 67a.
Sun xvii 32b.
M S. VIII. 235, XI. 136.
YS II. 10. 159
III 5. 271.
VP 9·43, 46, 59·16; 72·46; 99·406
MP 145 17
It is mentioned as good for sacrificial purposes.
xxviii 23a, xxx. 14b.
xxxiv. 15b. lxxii 20.
XCvi. 5a, 24b.
C iv. 6a. C viii. 24a., CX 2b, 3a.
Ara vi. 6a. XXV. 11b, 21a
xxxix. 5a. XI. 38a.
XIiv. 13b, 33a. I iv. 11a
lix. 24a
Yud CX. 49a.

Anaḍuha (Anaḍvāha)
Bull. *Bos indicus*
G VII. 15, XIII. 29; XVII. 28, XXII. 23. XXII 23.
B I 19. 5, 6.
Vas VI. 21, XIV. 45, 46.
Ayo lxxvi. 30b.
MS XI 136.
MP 109·23

Anekapa (Same as Hastin).
R V. 47.

Añjana
A kind of domestic lizard. May be of the following species *Calotes* sp., *Hemidactylus* sp.
Adi vi. 26a.
Sun iii. 27b.
Utt V. 4b. XXi. 38b. XXiii 15a.

Aśva (Also Haya, Hari, Vāha, Vājin, Vadana, Turaga, Turaṅga).
Horse. *Equus caballus*

RV I. 20.2, 28.7, 40.2.
III. 26. 3
IV. 15. 1
V. 30. 14
VI. 59. 3
IX. 64. 3
X. 68. 11
Occurs also at other places.
S.B. 6.2.1.18, 6.3.3.13, 6.5.2.19, 12.2.2.17, 13.1.2.5-8, 13.2.7.9
A.B. 6.30.9
G VII. 15; XIII. 16, 21; xix. 17
B. 1. 10.29, 19.8, II. 3.9, 6.34; III. 10.15
Vas. XXVI. 17, XXVIII. 9
Pan. II 4. 27.
V. 2. 19
VI. 2. 42
VII. 1. 51
Adi 1. 101a, m. 8b, etc.
Ayo xii. 11a, xiii. 23b, etc.
Aro ix. 19b. xxviii. 27b, etc.
Kis xxxiv. 14a, XIiv. 39b.
Sun XI. 10a. xii. 25b, etc.
Yud XVii. 26a. xix 35a, etc.
Utt. vii. 56. xxvi 47b, etc.
MS VIII. 14b, 159
XI. 38, 136, 199
K I 11, VI 39, VIII. 41; XV. 15, 31, XVI. 28, 43
R III. 50, 65; IV. 70, 71; VII. 39, 42, 44, 47, 52; IX. 50, 66; XVIII. 23
Mal. V. 14, p. 91
A I. p 23
VP 9·42-4, 46-7, 57·68, 80·15, 82·14
MP 8·8, 93·61, etc.

From B (I. 10. 29), dealing in horse appears to be a condemned practice for Brāhmaṇas. B (1. 19. 8) prescribes the same punishment for killing a horse as for murdering a Śūdra. The dust, raised by the horse's hoof, is not regarded as insanitary in a residential house. In certain cases, it is recommended as an object of gift.

Described by Kālidāsa as drawing chariots. Horses of *Vanāyu deśa* (Persia or Arabia) appear to have been good mounts. Used as a present to a king and in hunting. Sacrificed in *Aśvamedha-yajña*.

The VP. states that it is a good gift for Brahmins in *Śrāddha*. It is also useful in sacrifices. Houses of the Gāndhāra country are said to be the best.

The MP recommends (93·61) its gift in certain rites. The horses of Āraṭṭa are said to be the best (48·7).

Aśvatara

Mule.

It is the F_1 hybrid of male ass and female horse with

characters more akin to that of the genus *Equus*.
Utt. xxxi. 22b.
VP. 9·42 44

Avi (Also Urabhra, Meṣa) Sheep.
Ovis ammon
S. B. 6.2.1.18, 12.7.2.7
G VII. 15, XII. 22, XVII. 22
B 1. 12.4, 11 ; II. 3. 9
Vi 80. 4
Pan. IV 2. 39
V. 1. 8, 4. 28
MS V 8
VIII. 235
YS I. 7. 170
YS II 10.159
VP 78 17
One of the rural animals whose flesh is edible according to B. which, however, prohibits the drinking of its milk. In partition, B. prescribes a greater share of these animals for the eldest brother. According to VP, its milk is a taboo in *Śrāddha*.

Babhru
A kind of ichneumon. *Herpestes* sp.
B I. 19. 8.
MP 219.21
Generally the same as *nakula*. But, being used side by side with *nakula*, it appears to denote a distinct kind of ichneumon as distinguished from the ordinary *nakula*.
The *Prāyaścitta* for killing it is the same as for murdering a Śūdra.
According to MP, its hair stands erect at the sight of poison.

Balīvarda
Bull. *Bos indicus*.
Mal. IV p. 73.
MP. 106.4
According to MP., one making a pilgrimage riding a bull incurs heavy sin.

Bhadra (A kind of elephant)
Ādi. vi. 27a

Bhadramanda (Do)
Ādi. vi. 27a

Bhadramṛga (Do)
Ādi. vi. 27a

Biḍāla (Also Mārjāra)
Cat. *Felis domestica*.
Pan VI. 2. 72.
MS. XI. 131, 159.
A VI. p. 226.
Mal. IV. p.p. 58, 76.
Ādi. vi. 26a
VP. 54.40
Described by Kālidāsa as feeding on mice and preying on birds.

Camara (Camarī)
Yak. *Bos grunniens*.
Ara. XV 4b.
Utt. vi. 45b.
Me. 55
K I. 13, 48.

R IX. 65.
MP 118.58, 209 2, 27
Described by Kālidāsa as having a bushy tail, and living in the forest. Its bushy tail is stated to be used as a fan.

Chāga (Also Aja, Vasta)
Goat. *Hemitragus jemlahicus*
RV. I. 162. 3
IX 67. 10
X 134. 6
VI. 80. 6
G I 18
Ap I. 3. 6
Vas XI. 63 ; XXI. 23
Yud III. 23b.
MP 93.62

Chāgala
She-goat. Same as Chāga.
Yud XX. 42b.
KS 14 6.41, 44

Chuchundari
Mole. *Talpa micrura*
Shrew, *Suncus caeruleus*
MS XII. 65
YS III 213

Cillika
Ādi. XXVII. 12b

Cina
A kind of deer, probably so called as it feeds only on paddy of the Chinese variety.
Mbh. V. 10.86

Dantin (Also Karin, Gaja, Mātanga, Dvirada, Dvipa, Anekapa, Hastin Vāraṇa, Nāga, Kuñjara, Śuṇḍāra, Ibha, Kalabha, Stamberama). *Elephas maximus.*
Elephant.
Ayo XCI. 14b
Utt CXIII 18a
K VIII. 33, 69 ; XIII. 25, 38, 39, 41 ; XIV , 39, 42 ; XV 8, 10 ; XVI. 2, 28, 30, 31, 32, 38, 50
R I. 71
RS I, 15
MP 109·23, 116·25, 152·16, 117 ·2, 180·32 etc.
The MP states (152·16) that it is dangerous for an elephant to slip in mud

Dardura
Frog. Vas XXI. 24. *Rana tigrina* × other species *Bufo melanosticius* × other species
Its killing is prohibited on pain of penance accompanied by gift.

Ḍerikā
gandha-mūṣikā, according to a commentary.
Grey musk shrew. *Suncus murinus.*
B I. 19. 8
Ap. I. 25. 14
The *prāyaścitta* for killing it is tantamount to that for killing a *ḍiḍḍikā* (q.v).

Dhenu (Also Go)

Cow, particularly one that has recently calved. *Bos Indicus*.

G VII. 15, XIII. 29, XVII. 28 ; B. 1. 19. 5, 6 , III. 4.5, 8.19 ; AP. 1. 17 24, 30 ; 26.1, 31.11 ; Vas XIV. 45, 46

Ādi IV Ia.

Ayo XXV. 8a.

MP 52.18, 53.13, 105 20, 118 52, 145 17, 171.40

Yud Viii. 12b, CXiii. 82a.

Utt IV. 9a, 11b, etc.

A V. p. 159

K VIII. 38

R II 1. 4, 15, 26, 49, 52, 62, 67, 71

Its milk is used for *homa*

A cow, with a calf, is regarded as auspicious if seen at the time of starting for a journey

Its killing according to DS., particularly without sufficient reason, is prohibited on pain of severe *prayaścitta*. Its milk, within ten days of calving, is prohibited. Its flesh is edible according to A. According to V. this flesh is *medhya* (pure or fit for sacrificial purposes).

Dhurya

Horse or bull (lit. that which in tied to a *dhur* or yoke for drawing a cart or chariot).

Equus caballus (Horse) or *Bos indicus* (Bull)

R I. 54

Ayo xi. 10b

Ḍiḍḍikā

Mole ? *Talpa micrura*

B I. 19 8

The *prāyaścitta* for killing it is the same as that for murdering a Śūdra

Dvikhuri

Two-hoofed animal.

B 1. 12 6

The following animals appear to be included in this class :

Ṛśya, hariṇa, pṛṣata, mahiṣa, varāha, kuluṅga.

Dvipa

(Same as Hastin)

So called probably because it drinks water with two things, viz trunk and mouth.

Ādi Vi. 26b

Ayo xxxix. 42b, XIV. 8b, etc.

Ara xxx. 27b, xxxiv. 10b, etc.

Kis ii. 8b, xv. 2ab.

Sun iv. 8b, xv. 28b, etc.

Yud iv. 2a, vii. 34b, etc.

Utt vii. 28a, xxi. 24a.

MS vii. 192

A v. 5

K I. 6, VIII. 33 ; XIV. 40, 46

R II 7. 37, 38, III. 32, VII. 42, XIV. 38, XVI. 3, 39, 68, XVIII. 8, XIX. 11
RS II 15

Dvīpī
Tiger, panther, leopard. Probably so called as it has two colours on its body.
(1) *Panthera tigris*—Tiger
(2a) *Panthera uncia* } Leopard
(2b) *Panthera pardus* }
Ayo 94.7 C iii. 7a.
Ara I iii. 42a.
Yud xi. 38b
Utt vii. 20b, xxxi. 13a, etc.
Mbb. iii. 64.2

Dvirada
(Same as Hastin)
Kis. iv 9 62
Me. 61
K VIII. 64
R IV. 38, 39; VII. 39, IX. 73

Eka-śapha
One-hoofed animal.
(1) Horse—*Equus caballus*
(2) Ass—*Equus hemionus*
(3) Mule—*Equus* sp.
G XIII. 22, 2b; XXVIII 13
B I. 12.11
Vas II. 28
The milk of such animals is prohibited for drinking.

Eka-sṛka (Same as *Śṛgāla*)
Canis aureus—The common Indian Jackal
Ap. I. 10.19, 11.29
Its howl, when heard, causes cessation of studies

Elaka (Same as Avi) *Ovis ammon*
Ap. I. 17.22
Its milk is undrinkable

Eṇa (Same as Hariṇa)
R IX. 55
KS II. 6.41, 44

Eṇī She deer.
Ap. I. 3 3
Its skin is prescribed as an upper garment for a Brāhmaṇa Brahmacārin.

Gaja (Same as Hastin)
B I. 1 11
II. 6.34
Vas III. 11
KS II. 6.4, II. 8.19
Adi XX, 10a, xlii. 12b, etc.
Ayo vii. 30, xii. 11b, etc.
Ara vii. 76, XV. 6a.
Kis ix. 43a, xiii. 47a, etc.
Sun iii. 14ab, xi. 13a, etc.
Yud xi. 43b, xiii. 15a
Utt V. 4b, vii. 5a.
MS XI. 136
YS III. 5.271, 274
V IV. 5, 14, 23, 28, 35, 45, 46, 56, 62, 63, 71
V. 18
A I. p. 52, VIII. 31
K III. 37, IV. 31, VII. 32, 52; XIV 23, 33, 41, 43, 46, 49; XVI. 28, 29, 36; XVII. 29
R IV. 29, 45, 69, 76

V 43, 48
VII 46, 48
IX. 10, 15, 65, 71
X 86
XIII 74
XVI. 2, 33
XVII. 21, 52, 66
XVIII. 5
RS I. 14, 19 27
The dust, raised by it, is regarded as good for health in a residential quarter, according to B.

Gandhadvipa
Scent-elephant, i e. elephant in rut Same as elephant
V V. 18
R VI. 7, XVII 70

Gardabha (Also Khara, Rāsabha)
ASS *Equus hemionus*. Derived from root *gard*, it means that which makes itself known by its bray.
G XII. 20; XVI 8; XXIII. 5, 17
B II 1.3, 30, 6.34
AP I. 10 19; 26.8, 28 19, 21
KS II 6.41
Ara XXX. 5b
Its bray, according to DS., causes cessation of studies. Its flesh is necessary in the expiation of sin incurred by a Brahmacārin indulging in sexual intercourse with a woman (A, B). Among other things, the wearing of its skin is prescribed in expiating the sin arising from the destruction of *bhrūṇa* (foetus).

Gaura Hariṇa (Śveta Mṛga).
White deer.
RV V. 78 2, VII 87.6

Gavaya (Also Gomṛga)
Bos gaurus and also a hybrid of *Bos gaurus*.

Gayal
S. B
A. B
AP I. 17.29
Vas. XIV 41, 43
Vi. 80.9
K I. 56
R IX 53
RS I. 23, 27
MP 118 58
Its flesh is not edible (A). According to Mallināṭha, it is rarely seen.

Go (Also Dhenu)
Cow. *Bos Sp.* Derived from root *gam* it means that which can move on ceaselessly.
RV I. 38.2
II. 16.8
III. 45.3
IV. 5.3
V. 1.1
VI. 24.4
VII. 2.6
VIII. 33.6
IX. 12 2
X. 31 10

Occurs also at many other places.

G VII. 15; XIII. 29; XVII 28; XXII. 14

B I. 19 5, 6; III. 4.5, 8.19

Ap I. 17.24, 30, 26.1, 1, 31.11

Vas XIV. 45 46

S B. 6.2, 1 18, 12.7. 2.7

Go : Pan.

Adi I. 101b, ix. 56ab etc.

Ayo ii. 34a, xviii 36b etc.

Ara xx, 29a, xxix, 28b

Kis IV 3b, xvi. 33a etc.

Sun XV 27b, xvii. 32b etc.

Yud vii. 33b, xi. 38a etc.

Utt vi. 44b, xxii. 7a etc.

V 8

Ms VIII. 146, 242

XI. 130, 133, 135, 136, 137

YS I 7.170, 9.20, 20 etc.

Jl. 10.159

III 5.271, 272, etc,

R I. 88. II 3, 29, 48, 49, 61, XVII. 19.

RS III 16.

VP 9.42-44, 23.69, etc.

Pāṇini's grammar contains a lot of information about cows which were, perhaps, the most well-known domestic animals.

A herd of cattle was called *samaja* and a drive to the pasture *Udaja* (III. 3. 69).

Cows appear to have grazed in pastures called *gocara* (III. 3 119). Such a land, when abandoned, was called *gauṣṭhīna* (V. 2. 18). A wild region, with the fodder eaten up, was known as *aśitaṃgavīna aranya* (V 4. 7). From these words we can infer that the owners of cows were on the look-out for fresh fields and pastures new when the old ones no longer provided food for cattle.

The *word Kaḍaṅkarīya* (V. 1. 69) indicates that the cattle used to feed on straw which was called *Kaḍaṅ-kara*. Pāṇini VII. 1. 51 shows that salt constituted part of fodder for cattle.

Nipāna and *āhāva* (III. 3 75) appear to have been troughs for watering cattle

It is interesting to note that the word *gotra*, according to Pāṇini (Pan IV 2. 51), means a multitude of cows. In Vedic language, *gotra* means the common shed for cows of different families. The word *gotra*, applied to descendants of a common ancestor, appears to have owed its origin to the word used in the above sense. Tantupāla (Pan VI. 2. 78) seems to have been an officer-in-charge of royal cattle. The *Sūtra* for the

formation of this word belongs to Vedic accentuation. So, such an officer, perhaps, figured already in Vedic society

That cows were allowed to graze without a responsible keeper is proved by the fact that a cowherd of a certain age was regarded fit for this purpose. Such a cowherd was called *anugavīna* (Pan. V. 2. 15).

That cows played an important rôle in the life of the people is proved by the fact that there are various terms denoting cows at various stages of growth and in different conditions Thus, a heifer reaching puberty is called *Upasarya* (Pan III. 1. 104), its first mating being known as *Upasara* (III. 3. 71). In case of miscarriage, it is called *Vehat* (II 1 65). Just before delivery it is called *adyaśvīna* (Pan V. 2. 13), i.e. calving to-day or to morrow. After delivery it is called *gṛṣṭi* (Pan II. 1. 65). *Mahāgṛṣṭi* (Pan. VI. 2. 38) means a cow that continues to give milk up to the delivery of the next calf. *Vaśkayanī* (II. 1. 65) is the designation of a cow after about six months of its calving. The term *samāṃsamīnā* (Pan V. 2. 12) means a cow which calves every year.

That cows were pledged till the repayment of debt is proved by the word *dhenuṣyā* (Pan IV 4. 89) which denotes a cow kept as security.

A very young calf was called *Śakṛtkari* (Pan III. 2. 21). A calf, restrained while out for grazing, was called *prasaṅgya* (Pan IV. 4. 76); *prasaṅga* denotes a wooden club hanging from the neck of a calf. A two-year old calf is called *dityavāh* (Pan VII. 3. 1) A male calf, chosen to be a stud bull, is *ārṣabhya* (fit for being a bull, Pan V. 1.14) When growing up, it is called *jātokṣa* (Pan V. 4. 77). A young bull, a more developed one, a fully grown up bull and one in advanced age are called respectively *ukṣa, ukṣatara* (Pan V. 3. 91), *mahokṣa* (Pan V 4. 77) and *Vṛddhokṣa* (Pan V. 4. 77) or *ṛṣabhatara* (Pan V. 3. 91).

After the age of three a bull is given a nose-string (*nāthahari* III, 2. 25) and is castrated.

Bulls, meant for drawing

carts, etc. are classified in accordance with their work That drawing a chariot is *rathya* (Pan IV.4 76), a yoke *yugya* (Ibid), a cart *dhurya* or *dhaureya* (Pan IV 4. 77), a cart *śakaṭa* (Pan IV 4. 80), the plough *halika* or *sairika* (Pan IV 4. 81). From Pan IV 4. 78 we learn that a bull, tied to both the right and left sides of the yoke, is called *sarvadhuriṇa* (Pan IV 4. 78) and that to one side only *ekadhuriṇa*

Pan IV 2 136 refers to the bovine species born in Sālva country. It was, perhaps, regarded as very good.

Pan IV 2. 112, VL 3. 115 refer to *lakṣaṇa* or the branding of cows with different marks on their body, particularly ears. From the latter it appears that different marks were put on the ears of cows to indicate difference in their ownership. Some of the marks stated are *vista* (?) *maṇi* (jewel), *bhinna* (pierced), *chinna* (broken), *chidra* (hole), *sruva* (ladle), *svastika* (the sign so called).

The cow is mentioned as useful offering in sacrifices and as gifts to Brāhmins In describing the end of Kali Age, the VP. states that the number of cows will diminish and that cow-slaughter will be a sin.

Godhā

Iguana *Varanus* Sp.

RV VIII 69 9
X. 28 10, 11
V. S. 24 35
J B I. 221
P. B. 9. 2. 14
G XVII. 25
B I 12. 5
Ap. I. 17 37
Vas XIV 39
Pan IV 1 129-130
MS V 18
XI. 131
YS I 7 177
YS III 5. 270
A VI. p. 184
MP 257 12

One of the five-toed animals whose flesh can be eaten, according to DS

Certain low-class people appear to have used it as food, according to Kālidāsa.

According to MP., if a tree cut down for building purposes is found to be very yellow, it is supposed to indicate fear from lizards.

Gokarṇa

Deer antelope picta ?

Ayo C XI 48b.
Kis i. 13a.

Go-lāṅgūla

A kind of black monkey. *Macaca silenus* (Lion-tailed Macaque)
Ayo liv 30a
Ara XX. 26b.
Kis xxiii 46, xxxv. 30a etc.
Yud iii. 32C, xvi. 20a etc.
Utt XCVIII. 14a.
MP. 118 57

Gomāyu (Same as Śṛgāla)
So called as it makes a distorted sound, according to Kṣirasvāmin, commentator on the *Nāmaliṅgānuś āsana*
Ayo XCI. 18a.
Ara xlvi. 15b, lxv 2b etc.
Yud xi 35b, xviii. 55a etc.
MP. 146 66

Bhāgavata Purāṇa, V. 13.2

Go-pati
Bull. *Bos indicus*
Ara iii. 4b.

Go-puccha
A sort of monkey
Adi XX. 10b.
Kis xxvi. 2b.

Hanūmat
Ape. *Presbytis entellus.*
Utt xxxviii. 53b, xxxix 11b etc.
Ādi i. 78a, iii. 62 a etc.
Kis i. 5a, ii 1a. etc.
Sun i. 14b, ii. 1b, etc.
Yud iv. 12b, vii. 27C.

Hari
Monkey. *Macaca* sp.
Adi. 1. 74b, iii. 86b etc.
Ayo. CV. 23a, CVi. 3b
Ara XV 4a, xx. 26a, lxxvi. 73a
Kis xxxi 4b, xxxii 9a etc.
Sun i 7b, ii. 1a etc.
Yud i. 13b, ii. 3a etc.
Utt xxiii. 20a, xxx. 28b. etc.
Lion According to Mahīdhara on the following texts, a lion is so called as it has tawny colour.
YV. viii. 11 and xiii. 42

Hariṇa (Also Mṛga, Kuraṅgama, Ṛṣya, Nyaṅku Eṇa).
Deer
(1) (Muskdur — *Moschus Moschiferus*)
(2) Spotted deer or chital-*Axis axis*
(3) Barking deer—*Muntiacus muntjak.*
(4) Black antelope (Black buck) or Indian antelope —*Antelope cervicapra*
(5) Swamp deer or Barasingha-*Cervus duvauceli.*
(6) Sambar–*Cervus unicolor.*
RV I. 163, V. 78 12.
Me 83, 109
K V. 13, 15, 35.
R II. 11, VIII. 79, IX. 57 ; XIV. 69, XVIII. 13.
V I. 4, 9.
A I. 23, VI 17.
RS II 8.
VP 69. 206
MP 180. 25
One of the two-hoofed animals whose flesh can be

eaten (B). Its skin is prescribed by A as an upper garment for a Brāhmaṇa Brahmacārin.

Object of hunting, according to Kālidāsa.

Haryakṣa

Lion. So called, according to yāska, as its eyes are *hari* or tawny.

Panthera leo

YV. xxx. 21

Hastin Fem Hastini

Elephant *Elephas maximus*

RV I. 64. 7; III 36. 7 IV 16. 14, VIII 33 8; X. 18.3

KS VII 2. 34

KS stated Hastini as a type of women.

SB 3. 1. 3. 4

Pan II. 1. 62; III. 2. 54; V. 2 133, 3 88

A VII. p. 187

Mal I p. 16

Ādi V. 13b, lxxx. 3b

Ayo ii. 31a, xxxv 40b, etc.

Ara ii. 3b, iv. 34a. etc

VP 69, 211, 231-34 etc.

Kis ix. 107a, xlix. 13a.

Sun iii. 15b xi 7b. etc.

Yud iii. 15b, xi. 7b etc.

Utt xxxi 5a, xlii. 35a.

According to Sāyaṇa on RV. X. 18 3 *hasta* means that by the movement of which love is indicated

For the elephant it is the trunk (*hasta*) Being possessed of *hasta*, it is called *hastin*.

A species of elephants is stated by Kālidāsa to emit fragrant ichor Elephants are said to feed on *Sallakī* trees Sometimes decorative designs are described as painted over bodies of elephants. Described as chained to posts. Driven with the help of a goad. Sometimes described as rubbing their cheeks against *Devadāru* trees. Elephant-skin supposed to be put on by Śiva.

According to the VP (80 15) an elephant is good as a gift to Brahmins in a *Śrāddha*. It is also *Yajñiya* (useful for sacrifice) Making of gifts under the shadow of an elephant is meritorious (VP 80 45)

Haya (Same as Aśva)

Horse

MS XI. 136

YS III. 5. 273

K VIII 42

R IX. 10

Ādi vi. 24 ab, xi. 12a. etc.

Ayo xvi. 13a, xxxix 47b. etc

Ara ii. 3b, ix. 10b. etc.

Kis xliv. 74b

Sun xx. 6b, xli. 7a, ix. 20a

Yud vii. 33a, ix. 26b. etc.
Utt vi. 44a, xxvi. 7a, 8a, etc.

Ibha (Same as Hastin)

Probably so called as it is fearless (*i itaṃ vigataṃ bhayaṃ yasya saḥ*).

Nirukta, vi 12.1
R IV. 47, 59
K XII 15, XIII. 22, XIV 26, XV. 23, XVI 21.

Īhāmṛga
Wolf. *Canis lupus*
Sun XX 11b
Yu IXXX. 69a.
MP 163-1

Jambuka
Jackal. *Canis aureus*
Kis X.x. 20a.

Kakuda
Hump of a bull
Ayo viii 42a

Kakudmān, Kakudmin (Same as Vṛṣa) *Bos indicus*
K I. 56
R IV. 22
MP. 93.60
Supposed to be used by Śiva as his mount.

Kalabha (Same as Hastin)
V V. 18
Mal V p. 92
Me. 89
R III 32

Kālapuccha
A species of animals living in marshes. A kind of sparrow is also so-called. It is not clear which is meant here.
MP. 118 60

Kambala
A sort of deer with a shaggy coat of hair
Utt. xxxi. 22b. *Cervus unicolor* or *Cervus* sp.

Kambu
Elephant (?)
Sun xxxii. 10a
Utt xxviii. 12b, xxxi. 8b.

Kānanaukas
Literally, that which has a forest as its abode; monkey.
Sun Ix. 12a, lxvi. 7a, 12a, *Macaca* sp.
Yud xvi 19a, xxxi. 17b, I xii 12b
Kapi (Same as Vānara)
Monkey.
Adi i. 78a, 83b,
Ara lxxvii. 75a, 76a,
Kis i. 13a, ii. 25b etc.
Sun i 8b, ii 25b etc.
Yud ii. 47a, iv 17a etc.
Utt. xxiii. 35a, xxxviii. 55a etc.
YS III. 5 272
R XII. 59, XIV. 19, XV. 58
RS I. 23.

Kapilā
Brown cow. *Bos indicus*
Ayo I xxix. 20a

Karabha
Young elephant
Utt xxxviii. 73b

Karāla
Musk-deer *Moschus moschiferus*
MP. 118.60
Kareṇu (Same as Hastin, female species)
Ayo ix. 5a, xiii. 23a etc.
Kis xiii. 10b, xliv. 44b
Sun XV 28b, xxiii. 16b, XXVIII 28a
Yud lxxiii. 14b, XCV 6b etc.
Utt. xxi. 3b, 16b
K III. 37
R VI. 17, XVI. 16, 68
Karin (Same as Hastin)
Sun XV. 18b
Yud xxxv. 9C
Utt. vi. 44a, vii. 12a etc.
K I. 9, IX. 42, XIV 14, 19, XVI 33, 34, 35, 39
R III. 3, 37, IV. 48, 57, V 50, XVI. 78.
V IV. 29, 42, 45, 54, 56.
Mal. V I.
Kāsāra (Same as Mahiṣa)
Literally, that which approaches *Ka* or water.
AV. XVII. 3.42
K XIV. 7
Buffalo. *Bubalus bubalis.*
Kesarin (Same as Simha)
Vāj sam. xix. 91
So called as it has *Kesara* or mancea. According to some, its derivative meaning is that which is emaciated in *Ka* meaning water or dew.
A VII. p. 242
K I 6, XI. 43, XIV 28
Panthera leo
R II. 29, IX. 54
RS. I. 15
Khadga, Khadgin
Rhinoceros unicornis
B I. 12. 5
G XVII. 25
Ap. I. 17. 37
Vas XIV. 47
Vi 79 16.
MS. V. 18
R IX. 62.
Adi xxvii. 13b.
Ayo xxv. 33a.
VP. 60·207
MP 118 61
Though five-toed, it flesh is prohibited (B). According to A, its flesh is edible, V. refers to the difference of opinion on this question.
Khara (Same as Gardabha)
Equus hemionus (ass)
G XII. 20, XXIII. 5,
Ap. I 28. 19, 21.
B II. 6. 34.
Pan IV. 3. 35.
Ayo lxxxix. 13c, C. 55a etc.
Ara Ivi. 3a, I vii 49a.
Sun xviii. 30ab, xxvii. 16a etc.
Yud xi 38a, xxvii. 26b etc.
Utt vi. 44b, xxxiii. 37a etc.
MS. XI. 154, 199.
YS II. 10. 160.
III. 5. 271, 277, 280.

MP. 118 58

Its skin is to be put on by one atoning for the sin arising from the desertion of one's youthful wife, and from the killing of *bhrūṇa* (foetus), A The dust, raised by it, is inauspicious (B).

Koka

Wolf *Canis lupus.*

Ara. Iiii. 42b, Sun. xxvi. 9b, Yud, xxviii 18b

Kola (Same as Varāha)

Vas IV 48

Kṛkalāsa

Garden lizard. *Calotes versicolôr*

Ref. TS.

Ref. VS

J B. 1 221.

Utt. xvii. 5b, 29a, etc.

MP. 250, 12

Kṛkavāku

Lazard, chameleon. *Chamaeleon* sp.

AV. 5. 31 2.

VS. 24. 35

MP 219·19

Nirukta, 12. 3.

Kṛṣṇamṛga

A kind of deer. Black antelope.

A VI. 17.

Kṛṣṇasāra

The spotted deer or Black Buck *Antelope cervicapra*

V IV. 57

A I. p. 16, 20.

K III. 36.

R IX. 55, XIII. 34.

Kroṣṭu (Same as Śṛgāla)

So called as its cry is heard from afar.

Pan VII. 1. 95.

Bhaṭṭikāvya, V 80

Kṛṣṇa

A kind of animal feeding on carrion.

Av. xi. 2.2

G I. 18.

Vi. 79, 16.

Kukkura (*Same as Śvan*) *Canis familiaris*

Probably an onomatopoetic word, that which makes a sound like *kur kur* while scratching the ground.

MP. 118 59

Bhāgavata Purāṇa. ix. 24. 19

Kuluṅga

Antelope.

Vājasaneyi Saṃhitā, xxiv

Taittirīya Saṃhitā, V.

B I. 12. 6 Either *Antelope cervicapra* or *Gazella gazella*

One of the five-toed animals whose flesh is prohibited.

Kumuda

An unidentified animal ?

Utt XXX. 7a

Kuñjara (Same as Hastin)

Ādi xiv. 37a, XXvii 13b, liv. 19b,

Ayo xi. 26a, xx. 4a, etc.

Ara XV 4a, xxxii. 29b, etc.

Kis ii. 8a, xiii. 10a, etc.
Sun ii. 15a, V. 21a, etc.
Yud iv. 10a, xvi. 20b.
Utt vii 11b, xxi. 3b, etc.
R VII 39
RS II. 1

Kurangama (Same as Hariṇa)
Vas IV 71

Mahiṣa (Also Kāsara)
Bubalus bubalis.
Buffalo. (Wild buffalo)
Literally means that which gets pleasure in water
RV 6. 17 11 , VIII. 17. 10 ; IX 87 7
KS VII 2. 32.
B I. 12. 6 ; II. 2. 5
G XII. 21 ; XVII 21
Vas XIV. 35.
Vi 80. 10
MS V 9
YS II 10. 159
A II. p. 65
R IX 61, XVI. 13
Ayo xxv. 33b, lxv. 20a, cvi. 4b, cviii. 4b, cxi 48a
Ara. xv. 4b, lxxvi 17a
Kis xix 13a
Sun xv 40a, xviii 30a
Yud xv. 18a, xxxvii. 31a, 78b
Utt xx. 19a
MP 118.58, 209.24
One of the two-hoofed animals whose flesh can be eaten. The rearing of she-buffaloes for livelihood is a minor sin (presumably for a member of the twice-born classes)—B. The milk of it, within ten days of calving, is prohibited
Described by Kālidāsa as bathing in pools.

Maṇḍa (a class of elephants)
Ādi vi. 27a
Ara xx 25b

Māṇḍhāla
Flying fox, according to Monier Williams. It is a kind of frugivorous bat whose head is fox-like with long snout and large eyes.
Pteropus giganteus

Maṇḍūka
Frog. *Rana tigrina* and other species and *Bufo melanostictus* and other species.
G I. 64 , XXII 21
B I. 19 8
Ap I. 25. 14.
The *prāyaścitta* for killing it is the same as that for murdering a Śūdra

Mārjāra (Same as Biḍāla),
Felis domestica.
The term is derived from root *mṛj*—to cleanse.
The cat is so called as it cleanses its body by licking.
Vas XXI. 24 ; XXIII. 29.
MS iv 126
KS II. 6. 41
AYo cxxv 2a
KIS 1. 16b, xxvi. 2b

Yud xi. 38b
Utt vii. 21ab
MP 118 57
The sin for killing it can be atoned for by penance for twelve nights and some gifts. Students engaged in study, between whom a cat passes, have to abstain from food for one day and one night (V).

Markaṭa (Same as Vānara)
Monkey *Macaca Sp.* The derivative meaning, according to some, is that which moves according to the course of the wind.
Taitt Saṃhitā. VI. 4. 5. 7
MP 146.63, 217 21, 219.21
It is said to pass urine at the sight of poison. It is recommended to be kept in a stable.

Mataṅga
Elephant. (Same as Hastin)
Ādi xx. 16a
Ayo ii. 13b, xx. 39b, etc.
Ara xx. 26a, lxx. 26a, lxxxi. 28b
Kis. xxix. 10b, xliii. 13b
Sun iv 5b, v. 32b, etc
Yud iii 40a, vi, 26a, etc.
Utt ix. 20c

Meḍhra
Sheep. (1) *Ovis ammon*
(2) *Ovis orientalis*
KS III 3 16

Meṣa (Also Avikā, Ūrṇāvati, Urabhra) *Ovis ammon*
Ovis orientalis
Ram.
RV I. 126. 7
VIII. 56.3
X. 27. 17.
KS I. 4. 8, II. 1. 29,
IV 1. 33, VI 1. 25,
VII. 1. 36.
MS XI. 136.
YS III. 5. 271.
KS mentions ram-fight.
Ādi l. 6a, 7a, etc.
Ara xvi. 15a, 17a, etc.
Utt xxxviii. 29b
MP 146 63

Mṛga (Same as Hariṇa. Fem. Mṛgī)
Literally, that which searches (for food ?)
RV I 38 5, I. 105 7; V. 78.2, X 146.6
KS IV. 1.33, VII. 2.35
Pan. II. 4.12
IV. 2.80
IV 3.51
VII. 3 53
MS xi 69
K I. 46, III. 31, VIII. 38, etc.
IX. 25, XIV 10, XV 41
R 1. 40, 50, 52, etc.
V IV. 8, 59, etc.
A I. p.p. 15, 16, etc.
RS I. 11, 25; II. 9, IV. 8, VI. 12
Gīta x. 30
Ādi iii. 53a, viii 32a, etc.
Ayo ix. 18b, xxiv. 5a, etc.

Ara i. 34d, v. 9b, etc.
Kis xvii. 16b xviii. 5b, etc.
Sun xv 40a, xvii 8a
Yud xxvii 18b
Utt xvii 21b, xxi 66a, etc.
MP 21·9, 118 56, 180·40
According to Pāṇini, *Mṛga* denotes both wild beast (IV. 3.51) in general and deer (II. 4.12). Pāṇini mentions two types of deer, viz. *Mṛga* (IV. 2·80) or the white-footed antelope and *Nyanku* (VII. 3.53) or gazella.

Mṛga (elephant with particular marks)
Ādi vi 26a, 27a
Ara vii. 2a xx. 25b

Mṛgādhipa (Same as Siṃha, Mṛga-rāja) *Panthera leo*
K XIV. 29
Ayo xii 4b
Kis xviii. 22b, xxvi 24b
Sun xvii. 49b, lxiv 28a
Yud XXXV 9a, I. 33b, lxxx. 21a
Utt vii. 11b

Mṛgādhirāja (Same as Siṃha) *Panthera leo*
R II 41

Mṛgamātṛka
A kind of red-coloured hare-like deer. *Tragulus meminna* (Indian chevrotain—mouse-deer)
MP 118·59

Mṛgarāja (Same as Siṃha)
Lion
Panthera leo
K XIV. 27, 28
R VI 3

Mṛgendra (Same as Siṃha)
Panthera leo
A VII. p. 242
R II 30, 43, 51
RS I. 27
Ayo xx. 3b
Kis xiii. 47b
Yud xxxv. 15b

Mṛgeśvara (Same as Siṃha)
Panthera leo.
RS I. 14

Mūṣaka
Rat. Indian mole rat.
Bandicota bengalensis.
G XXII. 21
Vas XXI. 24
MP 118 58, 237·9, 257·14
The *Prāyścitta* for killing it is the same as that for killing a cat.
Extreme increase in the number of rats forebodes famine (MP 237·9).
If a tree, cut down for building purposes, is found to be extremely brownish, it indicates fear from rats.

Nāga (Same as Hastin)
Elephas maximus
V IV 42, 47
A II. p. 63
K I. 36, IX. 42, XIV. 34
R IV. 23, 83; V. 47, 51;

VI. 27; VII 41, XVI. 26, 41 ; XVII 32
Ādi vi. 25a, xxvii. 24b, etc.
Ayo. xxviii. 7a, xxxii. 9a, etc.
Ara. xiii. 4a, lxxviii. 25a, 31a
Kis. ix. 35b, xxxi. 22b, etc.
Sun. iii. 19b, iv 13a, etc.
Yud vii 33a, xvi. 41bc, etc.
Utt. x. 19a, xix. 10a, etc.

Nakula
Mongoose
H. auropunctatus
(1) *Herpestes auropunctatus*
(2) *Herpestes edwarsii* (more common)
G I. 64 ; XXII 21
B I. 19 8
Ap. I. 25 14
Vas XXI. 24, XXIII. 29
Pan VI. 3. 75
Yud XI. 38a
MS. XI. 131, 159
YS III. 5. 270
MP. 118.58
The expiation for killing it is equivalent to that for killing a Śūdra (B, A). According to V, it is equal to that for killing a cat. Fasting for one day and one night is prescribed by V for students, engaged in study, between whom it passes.

Pañca-nakha
Five-toed (animal).
G XVII. 25
B I. 12. 5
Ap. I. 17. 37
Vas XIV. 39
According to B., it appears to include the following animals
Śvāvit, Godhā, Śaśa, Śalyaka, Kacchapa, Khaḍga.
According to one commentator, it includes animals like the jackal, monkey, etc. According to another, it means man, monkey, cat, etc.

Paśu
Animal
Ādi. V. 5b, xiii. 29a, etc.
Ayo. xxxiii. 19a, lxi. 24b, etc
Yud. xl. 14a, lxxiv 37b, xcvii 14a
Utt. xxiii. 38b, xxviii. 48b, lxiii 44a

Pherava/Pheruka
Jackal. So called as it makes an indistinct sound.
Bhāgavata Purāṇa, VIII 16.7
Plavaṅga or Plavaga Monkey. Same as Vānara.
Ādi. iii. 143b
Kis. i. 2a, 6a, etc.
Sun. i.35b, 89a, etc.
Yud. vi. 22c, vii 26b, etc.
Utt. xxiii. 5b, 40, xxxviii. 92a, xl. 9a

Pracalāka
Chameleon *Chamaeleon* sp
Ap. I. 25. 14.

Pṛṣata (Pṛṣat)
Spotted antelope dappled cow or mare, according to Monier Williams. It may be spotted deer (*Axis axis*), as no true antelope is spotted.
RV. I. 162. 21
B I. 12. 6
Vas. XXI. 23
Vi. 80. 8
Ara. lxxviii. 13b
Ayo. cii. 2a, cxi. 48b
Mp 219. 21
One of the two-hoofed animals whose flesh is edible.
(B). According to MP, it weeps at the sight of poison
Pūtikhaṣa
Ground Squirrel, Woolly Hare. *Lepus oistolus*
According to the commentator, an animal like a hare well-known in the Himalayan region. Himalayan marmot (Ground Squirrel) *Marmota bobak* or the Woolly Hare.
Ap. I. 17.37
Rāma-śarabha An unidentified animal.
MP. 118. 60
Raṅku
A kind of deer
Ayo. xiii. 6b, xxx. 14b, xxxii. 8a, lxii. 19a
Ara. I. 15b
Rāsabha (Also Gardabha)
Ass. Derived from root *rās*, it means that which brays by giving warning as it were. Its intermitten bray seems to be like giving warning. *Equus hemionus*.
RV. I. 34. 9; III. 53. 23; VIII. 56. 3
S. B. 6. 1. 1. 11
K. XV. 21
Ayo. lxxi. 15a, 19a, lxxii. 25b
Ṛkṣa
Bear. (1) *Melursus ursinus* (Sloth bear)
(2) *Ursus arctos* (Brown bear)
(3) *Selenarctos thibetanus* (Himalayan black bear).
Adi. XX. 5b, 10b, etc.
Ayo. xxv. 33b, xxvii. 11b, etc.
Ara. liii. 42b, lxiv. 11b.
Kir. xxii. 4b, xxiii. 4b, etc.
Sun. xlvooo. 10b, lxiv. 5a, etc.
Yud. iii. 10ab, vi. 16a, etc.
Utt. xx. 19a, xlii. 53b, etc.
A. II. p. 65
R. XIII. 72
MP. 118. 57
Rohita
Deer with stripes.
Ara. lxxviii. 9a

Rohita
Doe
MP 209·26

Ṛṣabha (Same as Vṛṣa) *Bos indicus*
G VII. 15, XXII 14, 16, 18 , XXVIII. 14, 15
B I 19. 1, 2, , IV 4. .0
Ap. I. 24. 4
Vas. xxI 22
Ādi xiii. 30b, xIix. 3a.
Kis xxi. 38b, Iiv. 6a.
Sun xxvii. 14, xxxiv 6b, etc.
Yud x ii 2b, xx. 3b, etc.
According to DS, one kind of animals to be given to the king for expiating the sin arising from murder of a person of any of the castes other than Brāhmaṇa.
In certain types of *Prāyaścitta*, it is used as *dakṣiṇā*.

Ṛṣya
Painted or white-footed antelope, according to Monier Wilhams. *Antelope* Sp.
B. I. 12. 6
One of the five-toed animals whose flesh is edible.

Ruru
A kind of spotted or black antelope. *Antelope cervicapra*
Yv xxiv. 27
G I. 18
B I. 3. 15
Ap. I. 3. 5
Vas XI 62
Vi. 80. 7
R III. 31, IX. 51, 72
Ayo c xiv 33b
Ara. I xxviii. 13b
Its skin is to be put on by a Brahmacārin of the Kṣatriya caste as an upper garment (B, A, V.)

Sabalā
Spotted cow.
Ād Iiv. 10b, 11b, etc.

Śākhāmṛga (Same as Vānara)
Monkey *Macaca* sp
Ayo. c iii. 7a
Ara. I iii-42a
Utt xli · 23a
Kis. i 11a, xvi. 26a, etc.
Sun. i , 36b, xcvii 14a, 16a
Yud. ii. 15b, iv 47b, etc.

Salāvṛka, Salāvṛkī
According to Haradatta, commentor of the Āpastamba DS., a sort of *Vṛka* (q v) or jackal. Hyena. *Hyaena hyaena*
RV X. 73. 3
S. B. II. 5, 1, 9
Ref A B.
Ap. I. 10. 19, 11 29
MP 25 32
Its cry, when heard, causes cessation of study.

Śallaka (Śalyaka, Śaryaka)
Probably porcupine. *Hystrix indica*
YS I. 7 177

AV V 13.9
S. B. 2. 6. 4. 5
B. I. 12. 5
Ap. I. 17. 37
G. XVII 25
Vas. XIV 39
MS V. 18

Śambara (See Haṃsa)
Cervus unicolor
A kind of deer One of the five-toed animals whose flesh is edible (B, A, V)
MP 118·60

Śarabha
According to Haradatta's commentary on A. I 17.29, it denotes a kind of eight-legged deer. Seems to be mythical
S B. 1. 2. 3 9
A. B 2. 6. 8
Vas XIV. 43
A I. 17. 29
Me 56
RS I. 23
Yud. ii. 35b, iii. 44b etc.
Utt. vii. 20a, xxxi. 13a
VP 97 180, 9 42-4
MP 118 56, 135·66, 250·11
Its flesh is prohibited (V, A)
According to Mallinātha, an eight-legged deer jumping high

Sārameya (Same as Śvan) Dog.
Canis familiaris—The domestic dog
Probably so called as it can have sexual intercourse while moving.
RV I. 62. 3 , VII. 55 3
Utt. xviii.6b, xxv 12a etc.

Sāraṅga
A kind of spotted deer.
R XII. 24.
Me 21
V IV. 56
A I p.p. 14, 16, 52.
VI p. 197.
Mal. III. 1
Ayo. lxv. 14b, 16b
Kis. xxix. 22b
MP 180 37

Saraṭa
A kind of lizard
If a tree, cut down for building purposes, it found to be ruddy or light brown, it is supposed to indicate fear from lizards.

Śārdūla (Same as Vyāghra)
Panthera tigris
A VI. 27
K III. 44
Ādi. li. 17a, lxi. 16b
Ayo. xi. 16b, xxvii. 11b
Ara. vi. 3c, vii. 2a etc.
Kis. xviii. 22b
Sun. i. 27b, ii 47b etc.
Yud xvi. 39a, xx. 7a
Utt. vii. 20b, xx. 19a etc.
Described as preying on animals.

Śaśa (Śaśaka)
Hare, *Lepus nigricollis*
RV X. 28.9

G XVII. 25
B I. 12.5
Ap. I. 17.37
Vas XIV 39
MS. V. 18
YS. I. 7 177
Sun. xxiv 16ab
Utt. xxxii. 14a
MP. 209.21
Its flesh is edible, according to DS.

Sedhā
Hedgehog or porcupine. *Hystrix indica*
YS I 7. 177

Simha (Also Mṛgendra, Mṛgādhipa, Mṛgārāja, Hari, Kesarin)
Lion. *Panthera leo*
RV I 64.8, 95.5, 174.3
III. 2. 11
IV. 16. 14
V. 15. 3
IX 89.3
X. 28. 4
YV. V. 2
KS. V. 5. 65
Occurs also at other places
VP 93.68, 88.165 192, 92 74
MP 8.8, 94 4, 117 13
S.B. 3.5.1, 3.5.25, 5.5 4.10, 12.7.1 8
A. B. 6. 30 9
Pan. VI. 2. 72
K. L 56
R II. 27, 33, 38, 60, 61
IV. 72 ; IX 64 , XVI. 16 ; XVII. 52 , XVIII. 35, 37
A VII 14
Ara. liv. 46b
Described by Kāḷidāsa as living in caves, roaring mightily and preying on animals, particularly elephants The gait of a hero is likened to that of a lion. The VP refers (30 139) to the caging of lions.
Under Pan. VI. 3 109 *Simha* is derived from root *hins* (to kill) So, etymologically *Simha* means that which kills

Śivā (Also Śṛgāla, Gomāyu, Kroṣṭu).
So called as its cry, while lying down, is auspicious.
RV IV. 10.8
G XVI. 8
B I. 18 18, 21.18
Ara. xxix. 6b, 12b
Sun. lxxviii. 20b
Yud. xvi. 11b, xliv 43a etc.
Utt. vi. 53c, ix. 28a
MP 237.5
Its howl causes cessation of study till waking up the next morning, according to DS.
According to MP, its weeping with the face towards the sun, at sunrise, is supposed to portend fear.

Śṛgāla [Jackal]
Canis aureus. (Indian

fox-*vulpes bengalensis*). So called as it licks blood.

G XVI. 8
B I. 18. 18
MS. V. XI. 164 199
Mbh. XII. 17.45
Ara. liv 62a
Kis. xvi. 36b
Yud. lxxx. 68b

That it was looked upon as abominable can be inferrel from the DS rule that a Brāhmaṇa, who committed grave sins like the murder of a Brāhmaṇa, has to be branded with a mark resembling it on the forehead before banishment from his house.

Śiṃara

A kind of animals frequenting damp places. According some, *Bos Grunniens* (young deer).

Ara. xx. 24b
Utt. vi. 45b, xx. 19a

Stamberama (Same as Hastin)

R V. 72

Śūkara (Also Varāha)

Boar. Probably so called as it makes a sound like *Sū, Sū*.

RV. VII. 55.4 ; VIII. 77 10 , IX. 97 7, X. 86.4
YV. xxiv 40
AV. ii. 27.2
Sus scrofa—Wild boar
G XVII. 27, XXII. 26, XXIII 6
B I. 12.3, 6 ; III. 6.7
Ap I. 17.29, 21.15
Vas VI. 27 ; XIV. 47 ; XXIII. 30 Vi. 80.8
Yud. xi. 38b, XV. 18a

According to A and B, the flesh of village *śūkaras* is not edible. Contact with it is supposed to defile things. V (XIV 47) appears to refer to the existence of difference of opinion on the edibility of the flesh of a boar not living in the village.

Surabhi

Cow *Bos indicas*
Ayo. Ixxxi. 17a, c. 55a
Ara. xx. 23a, 28a
Utt. xxvii. 20b

Śvan (Also Kauleyaka)

Dog.

Lit. it means that which can smell from afar or which eats impure things.

Canis familiaris.

RV II. 39.4 ; IV. 18.13 ; VII 55.5 ; VIII. 46.28 ; IX. 101 1, 13 , X. 86.4
KS II 6.41
S B. 6.5 2.19
G I.64 , XIV. 30 ; XV. 24 , XVI. 8 , XXII. 14, 21
B I. 6.4, 9.2, 11 34, 37, 39, 14.15 , II. 6.34 III 6.7
Ap. I. 10.19, 15.16, 16.30, 21.15, 28.21 ; II. 17.20

Vas III. 45 ; XI. 9 ; XXI. 24 ; XXIII 29, 30, 31, 33
Vi. 81 7
Pan IV. 2.96, 4.11
MS XI. 131.199, VIII. 239
YS III 5.277
A VI. p. 186
K XV 24, 41
Ayo. lxxii 24b
Sun xxiii. 32b
Utt. vii. 21a, lxii. 14b, etc.
Vp. 78.38-40
Its touch, according to DS, is supposed to defile not only places and articles, but also men. Considered to be pure in a hunting excursion.
Its skin is to be worn for expiating the sin of the destruction of *bhrūṇa* (foetus).
The sight of *Śrāddha* by it is condemned. Food for dogs must be given on bare ground, not in any utensil.
The *prāyaścitta* for killing it is the same as that for killing a cat.
According to Kālidāsa, used by hunters in hunting animals

Śvāpada
Beast in general, usually wild beast.
G XXIII. 5
Ayo. cvi. 27b, cxii. 7b
Ara. xxx 32a
Sun xvi. 55b

Śvāvit (Śvāvit)
According to commentators, owl or an animal resembling a dog or a kind of boar
G XVII. 25
B I. 12.5
Ap. I 17.37
Vas XIV. 39
One of the five-toed animals whose flesh can be eaten.

Śvāvidh
MS V 18

Śveta Go
White cow ?
KS VII. 2.39

Tarakṣu
Hyena *Hyaena hyaena*
Ayo C iii. 7a
Ara I iii 42b
Sun xviii 33a
MP 118·57

Turaga (Same as Aśva)
Adi xl. 14b, xli 15b, etc.
Ayo xxvi. 199, xliv. 25a, etc.
Ara xxix. 2a, xxix 32a.
Yud xviii 53, xxix. 20a, etc.
Utt xlix. 2a, 12b.
KS II. 6. 41, II. 7. 33

Turaṅga (Same as Aśva)
A I. 28, II. p. 57
Mal. V. 91
R I. 42, III. 38, 39, 46, 51, VII 37, 47, 70, IX. 51, 53, 67, 72, 76. XIII. 3, 61. XIV 47 XVI. 30
K XIV. 20, 40, 42, 43,

XV. 23, XVI. 2, 36, 40, 42, XVII. 30, 31
Turaṃgama (See Turaga, Aśva)
Ādi xiii. 1a.
Ayo xlni. 15a, 16a.
Sun XIII. 39, liii 12b.
Yud xix. 12a, xxxv. 1b, etc.
Ukṣan (Same as Vṛṣa) *Bos indicus*
Ayo—ix. 45b
R VI. 72
Uptakṣaka
Utt xxxi. 23a
(1) *Ovis ammon*
(2) *O. orientalis*
Urabbra (Same as Meṣa)
Sheep
MP 118. 59
Uṣtra (Also Karabha)
Camelus sp
Camel (1) *Camelus dromedarius* (One-humped Arabian camel)
(2) *Camelus bactrianus* (Two-humped Bactrian camel of Central Asia)
RV VIII 6. 48
SB 1. 2. 39
G XII. 20; XVII. 22, XXIII. 5
Ap I. 17 23, 29
B I. 12. 11
Vas XIV. 40
Pan IV. 2. 39, 3.157
V 2. 79
VI 2. 40
Ayo—lxxii. 25b, C. 55a, etc.
Sun—xviii 30, xxvii 18b, etc.
Yud—xxxv 15b, liv 25a, etc.
Utt —vi. 44b, xxxiii. 37a, etc.
MSV 8, 18
VIII 146, 239
XI 137, 154, 199
YS I. 7. 170
II 10 160
III 5. 273, 277
RV 32
VP 9 42-44, 78. 17
Its milk and flesh are prohibited, according to DS
Its milk is a taboo in *Śrāddha*, according to VP
That a young camel was chained is known from Pan. V. 2. 79. Pan. VI. 2. 40 clearly refers to camel-riding and to the mixed corps of camels and mules. From Pan IV. 3. 157 it appears that certain articles used to be made of parts of a camel's carcass. Among such articles were large and small sacks (*goṇī, goṇītarī*—V. 3. 90) made of camel's hairs, and big or small jars (*kuṭī, kuṭupa* V 3. 89) made of the hide and intestinal integuments of camels.
Used as a draught animal, according to Kālidāsa
Vaḍavā (Also Vaḍava, a stud or coection of mares)
Mare
Pan. II 4. 27

KS II 6. 21
II 8. 33
Ayo lxvii. 23b
Kis xl. 49b, 50b
Yud ix. 3b

Vāha (Same as Aśva)
RV 73, XIV. 52

Vājin (Same as Aśva)
A I. p.p. 18, 20, 24
Mal V p. 91
R III. 43, IV. 25, VI. 33, IX. 56
K XIV 33, 34 ; XVI 25, 41, 42, 44
Ādi vi. 2b, xi. 11b, etc.
Utt xix. 10a, xlii. 28b, etc.
Ayo xii. 34a, xiii 23a, etc
Kis i. 13a, xliii. 31b
Sun xxvii. 20a, xli. 3b, etc.
Yud ix. 23a, xi. 43b, etc.
Ara ix. 5a, xx. 29a, etc.

Vāmī
Mare, according to Mallinātha.
RV 32
Used as a draught animal.

Vānara (Also Kapi)
Monkey A common species is (1) *Macaca mullatta* (2) Hoolock—*Hylobates* sp hoolock Hanūmān or Common Langur—(3) *Presbytis entellus*
RV I. 65 8
MS I. 39 , XI. 154, 135
KS IV. 1. 33
YS III 5. 277
VP 69 208
R XII 71, XVI 19
Mal IV p. 77
Ādi i. 64b, 66b, etc.
Ayo liv. 30a, Civ 19b, etc.
Ara xx. 26a, lxi. 5b, etc
Kis i , 3b, ii. 2a, iii 2a, etc.
Sun i. 3a, 12b, ii. 2a, etc.
Yud i. 2a, 5a , ii 8a, etc
Utt xvi. 16b, xxiii. 4a, etc.
Vanaukas lit, living in a forest.
Kis i. 16a, xvii 50a, etc
Sun i. 84a. iii. 8b
Yud i. 44a, ii. 13a, etc.

Varāha
Sometimes prefixed by Vṛṭ (Same as Śūkara)
Indian wild boar—*Sus scrafa.* The etymological meaning, according to some, is that which digs earth for getting its favourite roots, etc
RV i. 61. 7
G XXII. 26
B I. 12. 6
Vi 80 8
MS V. 14, 19
VIII. 239
XI 134, 154, 199
KS II. 6. 41, II. 8 20
YS I. 7. 176
III 5. 273
A II. p.p. 56, 65
K VIII. 35
R II. 17, IX. 59, 60
RS I. 17
Ādi xxvii 13b

Ayo xiii. 7a, xxv. 33a, etc.
Ara xv. 4b, xxxiv. 32b
VP 209. 23
Kis i. 13a, xlui. 31b
Sun xv 40a, xviii. 29a
Yud xv. 18a, xxxvii. 31a, etc.
Utt vi. 45b, xxxvi. 39b
One of the two-hoofed beasts whose flesh can be eaten, according to DS.
Described by Kālidāsa as feeding on *Mustā* grass in muddy pools. Big ones described as having tusks and digging earth with sharp hoofs.

Vāraṇa (Same as Hastin)
K VIII. 24, XVI. 22
Kis. xxix. 13a, xl. 16a, etc.
Ayo. xxviii. 11b, xlvii. 3b, etc.
Sun. lvi. 28a, lxxiv 8b, etc.
Yud. xxxvi. 27a
Utt. vi. 44a

Vasta (Same as Chāga)
G I. 18
Ap. I. 3. 6
Vas XI. 63. XXI 23
Its skin is to be worn by a Vaiśya Brahmacārin as an upper garment.

Vehat
According to the *Kāśikā* on Pan. II. 1. 65, a cow that miscarries.
Its gift is a part of the expiation for killing a cow.
Vas XXI 22

Vit
Vi 81 8

Vṛka
Wolf. *Canis lupus*
RV. I. 105. 7, 11, 18. II. 28. 10, 34.9 VI. 51. 6, 14. VIII. 34. 3, 56. 2. X. 73. 3, 95. 14, 127. 6, 133 4
S. B. 5. 1. 5. 22
B III 3. 6
Pan V 4. 41
MS. VIII. 235, 236
Ayo. cvi. 29d
Yud. xxvii. 28a

Vṛṣa (Vṛṣabha)
Bull. *Bos Indicus*
RV. III. 52.5 ; IV. 41. 5 ; VI. 46. 4
Also at many other places
KS. II. 6. 39, II. 8. 20
K VI. 29
R II. 35, XI 44
Ādi. iii. 130a, xxxviii. 9b
Ayo. lxi. 14a
Sun. xi. 3b, xv. 27b, xc. 8a
Yud. xi. 28b, cxiii. 82b
Utt. xxi. 52a, xcvii. 12ab
Ara. lxxvi. 26a

Vṛṣa-daṃśaka
An epithet of cat. So called as it bites *vṛṣa* which denotes, among others, rat.
Śukla Yv. xxiv. 31

Vyāghra (Also Śārdūla)
Tiger. *Panthera tigris*.
S. B. 12. 7. 1. 8
T. B. 1. 7 8. 1

KS. II. 6. 41, V 5. 16
B III 3. 6
Pan II 1. 56
R IX. 63, XII. 37, XVI 15
Ādi. xxvii. 14b, xli. 20b, xliii. 17b
Ayo. ix. 45b, xxix. 4a, etc.
Ara. ix. 24a, xx. 26b, etc
Kiṣ. i 13a, iii. 5a, etc.
Sun. I. 33b
Yud. iii 39a, xix. 61b, etc.
Utt. vi. 45b, vii. 20b, etc
MP 118 56

BIRDS

Ambuja
Aquatic animal (lit. born in water).
Utt. iv. 186

Aṇḍaja
Bird (lit. egg-born).
Adi ii. 15a
Ayo lxvi. 2b
Kis xliv. 87c
Yud lix. 30a
Utt xxiii. 21b. lxiv 43a

Antarikṣa-cara
Moving in the sky, bird.
Ādi xiii 29b

Anyapuṣṭa (same as Kokila q v) *Eudynamis scolopacea*
K I. 45
RS VI. 25

Anyabhṛta (same as Kokila)
R VIII. 59, IX. 34

Baka
The Cattle Egret, heron
(1) Purple heron (*Ardea purpurea*)
(2) Grey heron (*Ardea cinerea*) (The Common heron)
(3) *Bubulcus ibis* (The Cattle Egret)
G XVII. 32
Vas XIV. 48
MS V. 14
XI 135
Ys I. 7. 173
One of the birds whose flesh cannot be eaten.
Ayo. lxv. 14b
Yud. lxxxiii. 71b
VP. 69 326, 336
MP 118·51

Balākā
It is not the same as Baka, as some think. It is the Common Teal, *Nettion Crecca*
YV 24 22
G XVII. 32
Vs XIV. 48
MS V 14
XI 135
Ys. I. 7. 173
Me. 10
RS III. 12
Ara. lxxviii. 15a
Yud lxxxiii 71b, xci 25a, xciii 48a

Barhiṇa (same as Mayūra)
Pavo cristatus
B 1. 19.8
Ap 1. 25. 14
MS XI. 135
V III. 2, IV. 20, 22
K VIII. 36

R II. 17, XVI. 14, 64 , XIX. 37
RS. II. 6
Ayo xlix. 3a lxv 14b, cii. 18a
Ara viii 4a, xxvi. 22a, liv 64b
Sun xvii 10b, lii. 13a
Yud xv 9a, xlvi. 105a, etc.
Utt I, 22b
MP 153 116, 219 22
The *prāyaścitta* for killing it is the same as that for murdering a Śūdra

Bharadvāja
Skylark. The little skylark, *Alauda gulgula*
Ara lxxx. 23b
MP 118 30

Bhāsa,
The white-backed vulture, *Gyps bengalensis*
According to Haradatta, the commentator, a kind of vulture with wide beaks.
B i. 19. 8
Ap 1. 17. 35, 25. 14
Vas XIV 48 ; XXIII. 30
KS VII. 1. 34
YS III. 5. 272
MS XI. 135
Ara XX. 19a
Its flesh is prohibited as food. The *prāyaścitta* for killing it is the same as that for murdering a Śūdra.

Bhūlinga
A kind of bird dwelling on the ground.
MP 118 54

Cakora
Greek partridge.
(1) *Alectoris graeca chukar* (The Chukar)
(2) *Perdix rufa*
R VI. 59, VII 25
VP 36.1-5
MP 161 67, 219 18
According to MP (219·18), its eyes roll at the sight of poison

Cakravāka
The genus '*Casarca*' has now been changed to '*Tadorna*'. Hence the correct name is *Todorna ferruginea* (The ruddy sheldrake or Brahminy Duck).
RV II. 39·3
G XVII 26
B 1.19 8
AP 1.17 35, 25 14
Vas XIV. 48
Its flesh is prohibited as food. The sin for killing it is the same as that for killing a *Bhāsa* (q v.)
Ara XV. 3a, XX. 20b, etc.
Kis XIII. 86, XXIX 19a, etc.
Sun XIV. 38b, XVII. 25b, etc.
Yud lxxvi. 38b, lxxxiii. 71a
Utt XX. 20a, XIV. 14c, etc.
MS V. 12
YS I. 7 173
Mc 84

K V. 26, VII. 15, VIII. 32, 51, 61
RXV 30
A IV p. 141
V IV. 34, 36
VP 69 337-9, 45·19
MP 20·17, 118·51, 161 53, 180·27, etc.
Male *Cakravākas* are supposed to be separated by nightfall from their females and to mourn the separation throughout the night. Described as living in tanks or river-banks, and feeding on lotus-fibres.

Cāṣa
(Blue Jay) *Coracias benghalensis*
RV X. 97.13
MS XI. 131
YS I 7.175
MP 118·55
Vas XIV. 48
KS II. 8 29, VII. 1.42-43
Its flesh cannot be eaten.

Cātaka
Sparrow *Passer domesticus*
Pied crested cuckoo *Clamator jacobinus*
Pan IV. I. 128
Me. 10, 119
K VI. 27
R V. 17, XVII. 60
A VII. 7
Mal. II. p. 29
RS. II. 3
MP 154.388
Described as flying near clouds and subsisting on rain-water

Dārvāghāṭa
Probably wood-pecker *Dinopium bengalensis*
Vas XIV 48
Its flesh cannot be eaten.

Dātyūha
Gallinule (Moorhen)—*Gallinula chloropus*
Ayo Liv. 42a, lvi. 12a, etc.
Ara IXXXI. 11b
Kis XIII. 8b, XXVI 5a
Yud XV 9a, 11b
Utt XIV 14b
KS II. 7.8
MS V 12
YS I 7 172
MP 118.55

Dhārtarāstra
A kind of swan whose body is white and beak black.
MP 118.51, 161 53
(1) *Cygnus cygnus* (Whooper Swan)
(2) *Cygnus columbianus* (Whistling Swan)

Dhvāṅkṣa (Same as Kāka)
Pan II. I. 42

Dvija
Bird or any oviparous animal, appearing first as an egg.
Ādi LVI. 10a
Ayo IV 14b, IXXIII. 14c
Ara LIX. 39, IXVIII 6a
Kis IX. 24b, xli. 9a, lvii. 2a

Sun IV. 5a, XIII. 12ab, etc.
Yud II. 266, XI. 43a, etc.
Utt XXXIX. 6b, IXIV 2a

Garuda (Garutmat)

It approaches very near to the (1) *Golden Eagle* which feeds, among others, also on serpents. The large (2) *Himalayan Griffon Vulture* has also been referred to in this connection, but the vultures do not feed on serpents. However, the scientific names of both the types are given below

(1) Golden Eagle *Aquila chrysaetos*

(2) Himalayan Griffon Vulture—*Gyps himalayensis*

A huge fabulous bird supposed to be the lord of birds and feeding on serpents.

Ādi XIII. 286
Ayo XII. 23a
Ara XX. 33b, XXXVI. 6b
Kis X. 6b, IIx. 17a
Sun I. 32b, III. 59a, etc.
Yud XXVI. 10b, XXXVII 2a, etc.
Utt VI. 45a, VII. 39a, etc.
R XI. 27, 59
VP 69.328-38, 97.22, 24.80, etc.

Gṛdhra

Vulture known as Pharaoh's chicken.

(1) *Neophron perenopterus* (Egyptian or Scavanger vulture)

(2) *Gyps bengalensis* (Bengal vulture or white-backed vulture)

(3) *Gyps indicus* (Long-billed vulture)

G XVII. 27
Vas XIV. 48 , XXIII. 30
Ādi I 58b, III. 72b, etc.
Ayo XCI. 18a
Ara VII. 2b, XX. 1b, etc.
Kis XIX, 20, IVII 1b, etc.
Sun I. 1a, XVI. 26b, etc.
Yud XI. 35b, XVI. 11a, etc.
Utt VI. 52, XXXVI. 42a, etc.
A VI. p. 186
VV 8 15
Mal II p 32
R XI 26, XII 50, 54
K XV. 29
VP 30. 170, 19.6, 40.21-22
MP 39·6, 94 6

Stated to be carnivorous. Its flesh cannot be eaten. According to VP (19.6), if it touches the head of a person, he is sure to die within six months. According to MP , it pricks those who are doomed to Bhauma hell (39.6). It is the vehicle of Saturn (MP. 94.6)

Hamsa

Swan, Goose. (1) Grey leg goose (*Anser anser*). (2) Bar-headed goose (*Anser*

indicus). Both the species are referred to.

RV II. 34.5 III. 53. 10
IV 40 5 , 45 4
V 78. 1, 2
VII 59 7
IX 32 3, 97.8
X 124 9
YV XIX 74
KS II. 7. 8, 21
SB 6. 7 3. 11
G XVII. 26
B 1. 19 8
Ap. I. 17 35, 25.14
Vas XIV 48
MS V. 12
XI 135
YS I 7 172
III 5 272
Me 23, 59, 70, 81
K I 30, XIII. 27, 39 ; XIV. 35, XVII. 27
R IV 19, VIII. 59, XVI 33, 56 , XVII. 25, XIX 40
V IV 2. 3, 4, 6, 20, etc.
A VI. 17, 28
Mal II, 12
RS I. 5, III. 1, 2, 8, 11, 13, 16, 17, 24, 25 , IV 4
Ādi xxxvii 8a, xlv. 19b
Ayo. xxvii 18a, xliii. 22b, etc.
Ara. vii 3a, xv. 6b, etc.
Kis. xiii. 8a, xxix. 16b, etc.
Sun. ix. 9a, xi. 2b, etc.
Yud. xlix 22b, lxv. 25b, etc.
Utt. xviii 5b, xx 20a, etc.
VP. 41 70,
MP. 11.51, 116.4, 118.50, 161.54, 171.41

Its flesh is prohibited as food. The *prāyaścitta* for killing it is the same as that for murdering a Śūdra. Described as flocking to the Ganges in autumn, and flying to Mānasa lake in the rains through a passage in the Krauñca hill. The ideal gait of a woman is compared to that of a swan. Supposed to lie hidden in sandy banks of rivers and to feed on lotus-fibres. Supposed to have the capacity for separating milk from water when the two substances are mixed up. One's fame is compared to the whiteness of the swan. A white bed-sheet is compared to a swan. Cries of a swan are sometimes compared with the jingling of anklets.

Hārīta

Haritāla or green pigeon. *Treron phoenicoptera.*

V XIV. 48
KS. 7. 8
R. IV. 46

Its flesh is prohibited as food.

Described as moving about in the gardens of *marica* or black pepper.

Jala-kukkubha

Aquatic bird—may be belonging to the group of Divers and Waders. *Parra jacana* or *P. goensis*.

Ayo Ivi. 12b

Utt XX. 20a

Kis XIII. 8a, Ii. 12a

Jala-kukkuṭa

Water fowl (1) *Gallicrex cinerea* (Kora or water-hen) (2) *Gallinula chloropus* (Indian Moor hen)

Kis. XIII 8a, Ii 12a

Jālapāda (Same as Haṃsa)

G XVII. 33

Vas XIV 48

Its flesh can be eaten

Jīvajīvaka (Same as Cakora)

MP. 118·52, 161·67, 219·21

On seeing it the effect of poison is said to be counteracted (118.52).

Kādamba (Same as Haṃsa)

According to Mallināṭha, *nilahaṃsa*

R XIII. 55

RS III. 8; IV 9

Kāka

Crow (1) *Corvus splendens* (*Pātikāk* in Bengali) (2) *Corvus macroarhynchus* (*Dāṇḍkāk* in Bengali)

G XVII. 27 ; XII. 21

B I 19. 8 ; III. 6. 7

Vas XXIII. 30

Ayo CV 40a, 41a, etc.

Ara IV. 37a

Sun XXVII. 34b, XXXVI. 35b, etc.

Yud XXXVI 42a

MS XI. 131, 154, 159

MP 237. 10

The *prāyaścitta* for killing it is the same as that for murdering a Śūdra.

Its touch is supposed to defile articles. Its flesh cannot be eaten. Its cohabitation forebodes the death of a king or the downfall of a country (MP).

Kākola

Raven. *Corvus corax*.

MS V. 14

YS I. 7. 174

Kala-haṃsa (See Haṃsa)

Kis XXIX. 18a, Ii. 12c

Kalāpin (Same as Mayūra)

Pavo cristatus

R VI 9, 51

RS I. 16

Kalaviṅka

Passer sp

According to Haradatta, commentator of the G., it denotes village sparrow

SB I. 6. 3. 4

G XVII 26

Vas XIV. 48

MS V. 12

YS I. 7. 174

MP 118 49, 54

Its flesh is forbidden.

Kaṅka

Purple heron. *Ardea purpurea*

G XVII. 27
Vas XIV. 48 ; XXIII 30
R II. 31
K.s Ixii. 56
Sun vii 22a
Yud xvi. 11a, Ixiv. 20a, etc.
MP 39 4, 153.176
Its feathers are stated to have been attached to the roots of arrows.

Kapiñjala
Heath-cock, francoline partridge, according to Monier Williams. *Francolinus francolinus* (The Indian black partridge)
SB 1. 6. 33, 13. 5 1 13
B I 12. 7
MP 118· 54
Its flesh is edible.

Kapota (Same as Pārāvata q.v.)
RV 1. 30. 4
B I. 12. 7
Vas XIV. 48
Ayo XI 4a
Kis XIII. 22b
Utt VI. 53a
Sun XCIII. 4a, 5b
Mal IV. 76
VP 30. 241
MP 237 6
Its flesh is permitted as food (B) A *pāṇḍu-kapota* is prohibited (V).

Kāraṇḍava (Kāraṇḍa)
Fulica atra—It is a kind of Coot.
Ayo XXVII 18a, Iu 33a, etc.
Ara VII. 3a, XII. 14b, etc.
Kis XXIX 16b, XLiv 30b
Sun IX. 9, XIV. 39a, etc.
Yud Ixxxiii. 71a
Utt Lxxxiv. 4b
KS II 7. 8
Vas II 22
RS III 8
VP 41. 70
MP 161 53, 180 27, 219 20
Described as resting on a lotus at the bank after leaving the hot water. According to MP (219 20), it dies at the sight of poison.

Kekin (Same as Mayūra)
Pavo cristatus
K XIV. 35

Khaga
Bird
Literally that which moves in the sky.
Ādi III. 37a
Ayo Xci 16b, Xcvi 30b, etc.
Ara XIII. 89, XXIX 9b, etc.
Kis XLiv. 43, Ivm 46 etc
Sun Ixix. 11a, xciii. 5a
Yud xxvii. 34. Ixxxii. 90b
Utt VII. 21b

Khañjarīṭa (Khañjarīṭaka)
Wagtail Grey wagtail (*Motacilla cinurea*). Large Pied wagtail (*Motacilla* sp.) There are several species of *Motacilla* in India, such as, *M flava, M. citreola*, etc.

MP 118. 50
Vas XIV. 48
MS V 14
YS I. 7 174
Its flesh is prohibited.

Kikidivi
Blue jay, *Coracias benghalensis*
RV X 97. 13
Taittiriya Saṃhitā, V 6. 22 1

Koka (Same as Kokila q.v. or Cakravāka q.v.)
Ara Iii 42b
Sun XXVI 9b
Yud XXVIII. 18b

Kokila
Cuckoo Koel *Eudynamys scolopacea*
Vas XIV. 48
Adi IX. 15a, Ixvi. 6a, etc.
Ayo XIix. 2b, xcvi. 6b, etc.
Ara Ixxxi. 10b, 26b
Sun xvii 8a, xviii 9b, 20b
Yud XV 10b
Utt XIV. 11b, Ixiv 1b
V IV, 56
A VI. 4
Mal. III. 4
K III. 32, IV 16, IX. 26
R XII. 39
RS VI. 14, 20, 21, 24, 27, 35
MP 118 49, 161.64, 219 18, 237 5
Its flesh is prohibited. According to MP (219 18), its voice becomes unnatural at the sight of poison. Its cooing in *Hemanta* (dewy season) portends fear (MP 237. 5)

Koyaṣṭika (Koyaṣṭi)
Grus leucogeranus (Siberian or great white crane)
A small white crane, commonly called paddy bird.
Ayo liv. 42a
Ara lxxx. 23a
Yud xv 9a
MP 118 50

Krauñca (*a*) According to most ornithologists, (i) *Grus leucogeranus* (Siberian white crane) (ii) *Grus antigone* (Sarus Crane)
(*b*) According to some, Pond Heron or Paddy bird *Ardeola grayii*
YV xxiv 22
Ādi ii. 12b, 17b, etc.
Ayo cxi. 49b
Ara xx. 19a, xxii. 16b, etc.
Kis li 11a, lix. 30a
Sun ix. 57a
Yud liv. 19a,
VP 54. 19–21
MP 118. 60, 219 18
lxxi. 23b, lxxv 18b
According to MP (219. 18), it gets intoxicated at the sight of poison.

Kravyāda
A kind of carnivorous bird.
MP 237 6–7
Its fall on the head portends the death of the master of

the house. Its swoop at a portal, etc, forebodes the death of a king.

Kukkuṭa

Gallus domesticus

Cock (The domestic fowl)

MP 118.53, 159.10, 217.21, 237.5

Its crowing in the evening is supposed to portend fear (MP 237.5). It is recommended to be kept in a stable

VP 78. 38-40

Sun XV. 41b

It is a taboo in Śrāddha.

Kumkumacūḍa

A kind of bird with a saffron-like crest.

MP 118.74

Kurara

Osprey, a species of Eagle

Pandion haliaetus

Kis xxix. 16a, 11, 11a, etc.

Yud XV. 11a

VP 69. 336

MP 118.50, 161.53

Madanasārikā

KS III. 3. 16

Madgu

Diver bird, according to Monier Williams, *Gavia* sp. order—Gaviformes

G XVII. 32

Vas XIV. 48

Its flesh is prohibited

Māndhāla

Flying ox, according to Monier Williams. *Pteropus giganteus*—It is a kind of mammal.

G XVII. 32

Vas XIV. 48

Its flesh is prohibited

Marāla

A species of *Haṃsa* (q.v.)

K X. 33

Maukuli

Same as *Kāka*

Uttara-rāmacarita, II. 28

Mayūra (Also Barhin, Barhina, Nīlakaṇṭha, Śikhin, Śikhaṇḍin, Sitāpāṅga, Śuklāpāṅga, Kekin, Kalapin.

Pavo cristatus

RV I. 191. 14

YV XXIV. 23

B I. 12. 7

KS IV. 1. 33, VII. 1. 34

VII 2. 44

Pan II. 1. 72

IV 3. 48

Ayo xlvi. 11b

Ara xii. 15b, xxi. 13a, etc.

Kis xxix. 13a. xliii. 37a, etc.

Sun xii. 36b, xv. 41b

Utt xviii. 5a, 22a etc

Me 46

R III. 56, VI. 4, VII. 69, IX. 67, XIII. 27, XIV. 69, XVI. 14

V. II. 19. 3, IV. 71

A IV. p. 137; VII. p. p. 243, 241, 248

Mal I. 21

RS I. 13, III. 12

VP 54. 19–21
Its flesh is prohibited.
Described as having tail of golden colour, resting on a pole or stick in the house, dancing especially on hearing the rumbling of clouds. Some arrows are stated to have peacock's feather attached to them. The cry of a peacock is spoken of as resembling the *Ṣadja* or the first of the seven *svaras* of Indian music.

Naktamcara
Night-ranging birds like the owl. *Athene brama* (Spotted owlet, the most familiar bird in this country)
G XVII. 32
Vas XIV. 48
Its flesh is prohibited

Nicurdāru
Wood-pecker (?). *Dinopium bengalensis* (Wood-pecker)
G XVII. 33
Its flesh is prohibited.

Nīlakaṇṭha (Same as Mayūra). *Pavo cristatus*
Me 87
V IV. 13, 21

Nīlakaṇṭhi
Pea-hen
Sun Xi. 23b

Pakṣin
Bird (lit that which has wings)
Ādi xiii. 30a, xxvii. 12b, etc.
Ayo xxxiii. 24a, xliii. 33b
Ara V. 5b, vi. 9a, etc.
Kis. xiii. 11a, xvii 9b, etc.
Sun ii. 10b, iii. 39a, etc.
Yud iii. 35a, xi. 40b, etc.
Utt xviii. 31b, xx. 14a, etc.

Parabhṛta, Parapuṣṭa
Same as Kokila. Lit. nourished by others.
Mal IV. 2, V. 1.
V IV 12, 22. 3, 24.
A IV 9, V. p. 174
K VI 2
R IX. 43, 47
RS VI 22, 28, 31, 34
KS II. 7 8, III 3. 16, IV. 1 33
Ara lxxx 29a
Ayo lvi. 13a
Yud xv 9b

Pārāvata (Also Kapota)
Blue rock-pigeon. *Columba livia*
Vas XIV 4. 8 ; XXIII. 30
KS II. 7. 8
Me 40
V III 2
Mal II. 12
K IX. 1, X. 6
MP 118. 52
Its flesh cannot be eaten.
Described as resting on turrets of building or on house-tops.

Pataga
A bird.
Ādi iv. 53b, xliii. 16b

Ara xxiii. 8b, xl. 27a, etc.
Kis xliv. 25b, lxii. 38b, lxiii. 11a
Sun. V 32a, lxxxi. 2a
Yud. xvi. 86a, xxvi. 25b, xlvi. 122a, etc.

Patattrin
Bird
Ara xxi. 21b
Kis li 17b
Sun xlvi 18a
Yud lxiv 20b
Utt xxviii 24b, xxx. 24a

Patra-ratha
Using wings and vehicles.
Bird
Kis xliv. 93a
Utt vii. 33b, xviii. 25b

Pika
Same as Kokila.
White Yu. 24.39

Pecaka
Owl—food usually constitutes land vertebrates like small mammals, some birds and invertebrates like arthropods. The following species may be mentioned :
(1) *Athene brama* (spotted owlet)
(2) *Otus asio* (screech owl)
(3) *Bubo* sp. (horned owl)
(4) *Tyto* sp. (barn owl)
Yud XXVII. 31b

Plava
According to one commentator, a bird named *Śakatabila*. According to another, a kind of *baka* (q.v.). According to Monier Williams, a kind of aquatic bird.
G XVII 26
Ap I. 17 33
Vas XIV. 48
Ara lxxvii-7a, lxxxi.43a
Ayo cxi 49a
Kis li 12c
Sun lxxxv. 6b
MS V. 12
YS I. 7. 173
Its flesh is forbidden.

Priyaṃvada
A bird which has not been identified.
Ara lxxx. 23b

Puṃskokila
Male cuckoo.
Ayo cxi.49b

Pūrṇamukha
A kind of bird not yet identified.
Ara xxx.23b

Putrapriya
A kind of bird not yet identified.
Ara lxxx.23b
MP 118 52

Raḷātaka
An unidentified bird.
Vas XIV 48
Its flesh is prohibited.

Rājahaṃsa (A kind of *Haṃsa*, q.v.)
Me II

RV 75, VL 26, XVI 54
VI 18, IV 30
RS III 21
K IX. 34, XVII 36

Rajjudālaka
A kind of wild fowl.
Gallus sp
YS I. 7. 174

Rajjuvāla
Variant of Rajjudā.aka
MS V 12

Rakta-pāda (Same as Pārāvata)
G XVII 27
Its flesh is forbidden

Rakta-tuṇḍa
According to commentator, birds like *Cakora* (q.v).
G XVII. 27

Raktavartma
A kind of bird which has not been identified
MP 118.53

Rathāṅga (Same as Cakravāka)
V IV. 37
K III 24, 37

Śakuni (Sakuna)
A large bird , a bird which indicates omens.
Gyps bengalensis (White-backed vulture)
Gyps indicus (Long-billed vulture)
A B.
S. B
Ādi ii. 18b
Ara vii. 4a, lxxxi. 20a
Yud xiii. 8a, xv 20b, lxxiv 15b, lxxv 38b, etc.
Utt V 28b, xxi. 10a
VP 30. 260

Sāraṅga
According to Monier Williams, it is the name of various birds-peacock, Indian cuckoo, *Rājahaṃsa, Cātaka*, etc.
Vas XIV. 48
Ayo. lxv 146, 16b
Kis xxix. 22b
Its flesh is prohibited.

Śarāri
Heron
Ardea cinerea (Gray heron, the Common heron)
Ara XV. 6b

Sārasa
A sort of crane
Grus antigone (Sarus Crane)
MS V 12
YS I. 7. 172
Me 31
R I 41, XIII. 30, 33
Mal III. 6
RS III. 8, 16
Ādi xxxvii 8a
Ayo xlvii 3b, civ 3a
Ara xv 3a, xx. 20b, etc.
Kis xiii 8a, xxvi. 5a, etc.
Sun ix. 57a, xvii. 36b, xviii. 20b
Yud xv. 10b
Utt xx. 20b, xlv 14b
MP 116. 10, 161 53-54, 180.26
Its cry is supposed to be melodious. Described as flying in a row.

Sārikā
Vas XIV 48
KS I 4 8., IV 1 33, VI 1, 25
Common myna
Acridotheres tristis
MS V 12
Me 90
Ayo xiii. 24a
Sun XV. 35b
Yad xi 40a
Utt vi 53a
MP 118 52, 161, 67, 219 20
Its flesh is prohibited.
Described as being reared in a cage. It is said to vomit at the sight of poison (MP. 219 20).
Śikhaṇḍin (Same as Mayūra)
YS III 5. 272
K I 15 VIII 67
Śikhin (Same as Mayūra)
Me 34, 70
Mal II. 12
V 10
RS II 14, 16 ; III. 13
Ayo lvi 12a, lxv. 16b
Sitāṇḍaja (Same as Haṃsa)
RS III. 3
Sitāpāṅga (Same as Mayūra)
V. IV. 31
Stokaka
Clamator jacobinus (Pied crested cuckoo)
Ara xxxv, 28b
Śuka
Parrot. VI. 1. 25
Psittacula krameri.
RV 1 50.12
YV xiii. 47
G XVII 32
Vas XIV 48
KS I 4 8, II 7 8, III 3 16, IV 1 35, VI. 1 25
MS V. 12
XI 134
YS I. 7.172
III. 5.271
V II 22, IV. 17
A I. 13, III. p. 100
R V. 74, XVII. 20
RS. VI. 20
Ayo. liii 24b, 25a
Ara XX. 18a, 21a
Mbh xii 314 2
MP 118 51, 219 20, 257 13
Its flesh is forbidden.
Described as being kept in a cage and talking sweetly It is said to scream at the sight of poison (MP 219.20). If a tree, cut down for building purposes, is found to be pearl white, it indicates fear from parrots (MP. 257.13). Green things and soft ones are often said to be like the parrot's belly. Stated as living in the hollow of a tree.
Śukāpāṅga (Same as Mayūra)
Me 32
Suparṇa
According to Haradatta's

commentary on A., it is the same as Śyena (q.v.). Any large bird of prey—vulture, eagle, etc.

A. B.
S. B.
Ap. I 17. 35
Ādi. iii. 108b, xliii. 16b, etc.
Ayo xxv. 25a, cxvii. 9a, etc.
Ara. viii. 3a, xxxiii. 19b, etc.
Kis. i. 15a, xv. 25a, etc.
Sun. iii. 62a, v 34b, etc
Yud. xvi. 35b, xxvi. 17a, etc.
Utt. vi 60a. xvi. 10a, etc.
Its flesh is prohibited.

Śyena
Hawk, falcon. *Falco peregrinator.*
RV I. 32.14 ; 33.2 ; 71.4 ; 80.2 ; 96.4
IV. 6. 10
VII 63. 5
KS VII. 1 34
Ayo. xlv.. 5b
Ara. xx 19b
Kis lix. 30b
Yud. xvi. 11a, xxvii. 34a, lxvii. 22a
Utt. xv. 5a
MP 93.151
Occurs also at many other places.
The use of its bones is recommended in *Navagraha-homaśanti* (MP).
S. B. 12. 7. 1. 6
A. B.
G XVII. 27
Vas XIV. 48
B III. 3 6
Pan. VI 3.71
MS XI. 135
YS III. 5. 272
R VII. 46, XI. 60
K XVI. II, 27
Its flesh is prohibited.

Tiriṭaka
A kind of bird not yet identified.
Ara. lxxx. 23a

Ṭiṭṭibha
According to a commentator, the bird which makes the sound *ṭiṭṭibha*.
G XVII. 32
Vas XIV. 48.
MP. 118·51
Its flesh is prohibited.

Ṭiṭṭibhī (Feminine form of *Ṭiṭṭibha*)
Ayo viii. 41b.
Yud lxxxiii. 71b.
MS V. 11.
YS. I. 7. 172.

Tittiri (Tittira)
Francolıne partridge.
(i) *Francolinus* sp. (Grey partridge).
(ii) *Francolinus francolinus* (Black partridge).
B I. 12. 7. Both the species are referred to.
S. B. I. 6. 3. 5.
Ayo C. 66b.
MS. XI. 134.
YS. III. 5. 274.

Its flesh is prohibited as food.

Tiriṭaka

An identified bird.

Ara LXXX. 23a

Ulūka

Owl. (i) Great-horned owl —*Bubo bubo.*

(ii) Spotted owlet—*Athene brama.*

Ap. 1. 10 19.

B 1. 19 8.

Vas XXIII. 30

Ayo—C XXV. 2a.

Ara—XX. 19b.

Utt -I xiv. 2b, 3a, etc.

MS. XI. 131.

MP 131 29, 237.12

Its screech, heard by a student engaged in study, causes cessation of study. Its hooting at the gate a house forebodes the death of a king, etc., and the destruction of wealth, etc., (MP. 237 12).

Its flesh is prohibited The *prāyaścitta* for killing it is the same as that for murdering a Śūdra.

Vāja

An unidentified bird.

S B. 1. 6. 33, 13 5 1. 13.

Vañjulaka (Vañjula)

A kind of bird not yet identified.

Ara. lxxvi. 13a, lxxx 23a

Kis. xiii 8a

Vāraṇa

B 1. 12. 7

Its flesh is prohibited.

Vārdhrāṇasa

According to Haradatta on A, a kind of bird having the nose resembling leather.

B 1. 12. 7.

Ap. II. 17 3

Its flesh is permitted as food. According to A, its flesh is particularly gratifying to the Manes in *Śrāddha.*

Vāyasa (Same as Kāka, q.v)

B 1. 6. 4, 14. 15

Ap. 1 25 14.

Vas XI 9 ; XIV 48

KS VI 2. 70, 71

YS. III. 5 277

Ayo xci. 18a, cv. 55a

Ara. liv. 64a, lxxxi. 23b

Utt. xviii 5a, 31a.

Kis. xix. 20a

Sun. xxxvi. 41a, lxvii. 29a, etc.

Yud lix. 29a, lxxvi. 38b

Its touch defiles things. The *prāyaścitta* for killing it is the same as that for murdering a Śūdra. Its flesh is prohibited as food.

Vihaga

Lit. moving in the sky ; bird.

Ayo xlix.2b, lii.30a, etc.

Ara. xvi. 6b, xxix. 13a, etc.

Kis. xliv. 36b

Sun. iii. 59b, ix. 8b, etc.
Yud. xi. 39b, xv. 17a, etc

Vihaṅga
Same as Vihaga
Ayo. CV 13a, 40b, cxxxv. 4a
Ara. lxxv. 2a, 19a, 30a
Kis. xxix. 22b
Sun. iv. 13b, xi. 17b, etc.
Yud. xv. 10a, xxxvii. 41b, xliv. 43b
Utt. vi. 45a, xviii. 22b, etc.

Vāśālākṣa
A screech-owl.
Otus sp.
Utt. xxxi. 22a

Viṣkira
A class of birds which eat insects, corns, etc., after scratching the earth with their legs.
Pan VI. 1 150

FISH AND OTHER AQUATIC CREATURES

N B. Aquatic birds have been included in the list of birds

Aṇḍaja

Lit. born of eggs. The term denotes, *inter alia*, fish.

The following floating verse contains the names of some species of fish :

rohite mohitaḥ putro, madguro madguroḥ prīyaḥ / śākule ākulaḥ bhāryā kavayī mama jīvanam //

It means : My son is extremely fond of *Roḥita*. *Madgura* is a favourite of my preceptor. My wife is eager for *Śakula*. *Kavayī* is my life.

Rohita–In Bengali *Rui*

Madgura–In Bengali *Magur*

Śakula–In Bengali *Siṅgi*

Kavayī–In Bengali *Kaī*

MS i. 44

Baḍiśa

This word denotes here a kind of fish whose form is curved like a fish-hook. In that sense, *Notopterus Chitala* (*Cital* in Bengali) is very near the type referred to.

Note : In Telugu, Baḍishya means—*Chela baicala* (*Celā* in Bengali) which is not only very small but its curvature is insignificant compared to *Notopterus chitala*.

MV 1390

Bala

Cat-fish carrying eggs and young ones in the mouth.

(1) *Tachysurus arius*—Calcutta and other parts of W. Bengal, Orissa, Kerala, Bangladesh.

(2) *Tachysurus dussumieri*—Malabar, Kerala, Madras, W Bengal.

Barbara

Occurs in the *Rājanighaṇṭu*.

Bhīruka

MV 1385

Occurs in the *Rājanighaṇṭu*.

Bṛhacchiroromaśakarī

B I. 12. 8

Ceṭa

Vas XIV. 41

Ap. 1. 17. 38

It cannot be eaten.

Chanvilocha

Hammer-headed shark.

Sphyrna blochii

S. zygaena

S. tudes

MV 1385

Cilicima

B 1. 12. 8. Also in the *Rāja-nighaṇṭu* and *Nāmaliṅgānuśāsana* According to Kṣīrasvāmin, commentator of the latter, it denotes Vālukā-matsya : Edible.

Dantapatala

Having tan-coloured teeth.

Eutropiichthys vacha

MV 1387

Gaḍaka

Occurs in the *Rāja-nighaṇṭu*.

Gagdhara

Crow-fish

Xenetodon cancila

MV 1388

Gargara

Occurs in the *Rāja-nighaṇṭu*. It occurs in the R.V. viii. 69 9 as an onomatopoetic word.

Gavaya

Vas XIV 41

Not edible.

Gojjala

Living in shallow water.

Channa marulius

In Bengali *Gajār*.

MV 1388

Grāha

A rapacious animal living in fresh or sea water. Any large fish or marine animal, e.g. crocodile, shark, etc.

Adi xlii. 7b

Ayo IV 4a

Kis xli 21b, xliv. 48b

Sun lxxiii 12b, lxxv. 28a, etc.

Yad I.v. 25b

Jalacara

Living in water.

Adi xiii. 29b

Jalaja

Aquatic creature ; fish.

Ayo lxii. 32b

Kacchapa

Kachuga sp. *Testudo* sp. *Trionyx* sp.

The term 'Kacchapa' refers to both turtles and tortoises. They belong to several genera, of which the genera *Kachuga, Chelone* and *Trionyx* represent various turtles common in our country, whereas, *Testudo* represents the common Indian genus of tortoise.

G XVII. 25

B 1 12. 5

Ap. 1. 17. 37

Vas XIV. 39.

Ara xl. 26a, 30b

Kis li. 26a.

Sun lxxx. 19b.

Utt vi. 45a, XC. 17a.

MS I. 44

YS I. 7 177 .

Edible.

Kadamba

Kis xiii 8a, xxvi 5a, etc.

Sun Ivi 1b, xiv 38a

Utt XX 20a

Kahlava

Playful.

Puntius carnaticus

MV 1390

Kambu

Conch

It is not a fish. It refers to popular conch-shells having commercial as well as religious importance in India. It is a Prosobranchiate Gastropod belonging to the *Phylum Mollusca*.

Sun. xxxi. 10a

Utt. xxviii. 42b, xxxi 8b

Kaṇṭakara

Thorny (Bony ?).

Plotosus sp.

In Bengali *Kānmagur*.

MV 1386

Kaṇṭharaya

Having a beautiful neck.

Barilius bendelisis

MV 1389

Kauratta

Hilsa, ilisha

Kavayi

MV 1393

In Bengali *Kai*

Kavikā

Both the above words occur in the *Raja-nighaṇṭu*. The word appears to be derived from *Ku*+ *Vay*+ *in* (to go). *Ku* has been variously explained as water, earth, etc.

Khandalipa

Drinking small drops.

Mastacembelus armatus

MV 1391

Khalamisā

Occur in the *Rāja-nighaṇṭu*.

Khiriḍa

Coronets (In Bengali, the fish *Pāṅgās*)

Pangasius pangasius

MV 1386

Kovakiya

Polynemus tetradactylus. (In Bengali, the fish *Tapse*.)

MV 1396

Kovasaka

Living at bottom

Mystus aor—In Bengali, the fish *Āḍ*.

Mystus seenghala—In Bengali, the fish *Ṭyāṅrā*.

MV 1386

Kulira

Crab.

Several genera are represented in India, of which species of *cancer, Maia, Inachus, Portunus*, etc., are noteworthy

Vas XIV. 41

Not edible.

Kumbhira

Crocodylus sp. Crocodile

VP. 9 96

Kūrma (Same as Kacchapa, q.v.)

Kachuga sp.

S. B. 6. 1. 1. 12, 7 5. 1. 1.

Ayo C XXV 15a.

Kis xvi. 35b.

Sun XXV. 12b.

Yud lxxiv. 12

MS V. 18

Madguru or Madgura

Clarius batrachus. In Bengali, *Māgur* fish.

Occurs in the *Rāja-nighaṇṭu*. *Suśruta-saṃhitā* i. 46 and MS. V. 13

VP. 11, 19, 93, 94

The derivative meaning seems to be this—that which sinks into mud.

Mahāśīta

Very cool-tempered.

South Indian Mahasser

Tor mussulah or *Tor Khudree*

Both the species are applicable, though, *Tor mussulah* seems to be the type, as it is distributed in fresh water of S. India.

MV 1390

Makara

Crocodile, marine monster. Short-snouted Crocodile *Crocodylus porosus*

V IV. 54

K XIV. 9

Ayo. xlvii. 3a, C ii. 13b, Cxxiv 22a

Sun. ii. 11a, vii. 38a, etc.

Yud. lxxviii. 6b, C ix. 15a

Utt. vi. 45a, vii. 3b, etc.

Gītā. x. 31

Manuṣya-śiras

Having head like that of a man.

Ap. I. 17.39

Not edible.

Marila

Channa striatus (*Ophicephalus*) *striatus*.

MV 1392

Matsya

Fish. The word originally denoted excessive greed.

RV VII. 18.6

x. 68.8

Pān IV. 4.35

Ayo lii. 39b, lxx. 47b, etc.

Ara xxviii. 29, xliii. 47b, etc.

Kis li. 26a

Sun lxxx. 19b

Yud lxxiv. 12a

Utt. xc. 17a

Mīna

Fish

It also signifies that some fish "Kill small fish and other aquatic animals". According to some other authors, Mīna is derived from a root which means 'Scattering or Splashing (water)'. In both the opinions, reference is made to the predatory

habits of the Cat-fish. The common genera are—*Wallago*, *Mystus*, *Pangasius*, etc.

The word denotes graceful gait.

Yv. xxx. 16
Ādi xiv 18a
Ayo ci. 41b, cxxv. 4b
Ara xxix. 13a, lix. 40a
Sun lv. 9b, lvi. 2a, etc.
Yud cix. 17b
Utt vi. 45a, vii. 7a, etc.
MS. xi. 68
Gītagovinda i. 5

According to commentator, Haradatta, it is the same as *Makara*

Ap I. 17 39

Not edible.

Nadaka

Tubular.

Puntius Curmuca

MV 1390

Nakra

From the description it appears that it is either Sword-fish or Saw-fish (*Pristis* sp.)

Yv xxiv. 35
Vas XIV. 41
Pān VI. 3. 75
Ayo xxviii. 15a, xlvii. 3a, C xxxv. 22a.
Ara xvii. 23a, xxvii. 9a, etc.
Kis xvi. 36b, xliv. 53b
Sun i. 2b, xviii. 29a, etc.
Utt. xxi. 6a, 35C
MS I. 44
R VII. 30, XIII. 11, XVI. 55, 79

Not edible.

Pallaka

It is a Telugu word which means the Red-fish, *Lutianus roseus*.

Red fish.

Lutianus roseus

MV 1390

Pandimana

It is a Telugu word.

White-fish.

Lates calcarifer.

MV 1389

Pāṭalapicchaka

Having tan-coloured tail fin

Clupisoma garua. In Bengali, *Khayrā* fish.

MV 1387

Pāṭhīna

Wallago attu.

In Bengali, *Voyāl* fish. Is it the same as *Vodāla* mentioned in Monier Williams' *Sanskrit-English* dictionary (on the authority of Sanskrit lexicographers ?)

From Kullūka's commentary, it appears to have been a large fish preying upon the small ones.

MS V. 16
YS I. 7. 178
MV 1386

Rājīva

Des ?

B I. 12. 8

MS V. 16

YS I. 7. 178

Edible.

Rakta-matsya

Occurs in the *Rāja-nighaṇṭu.*

Rohita

Pink-coloured *Labeo fimbriatus.* Probably so called because of its reddish tinge. In Sanskrit, sometimes R and L are identical.

B I 12. 8

MS V 16

Sahasra-daṃṣṭra

Lit. thousand-toothed.

Under Mbh. xii 29 27, the commentator, Nīlakaṇṭha, identifies it with Ulkā (q.v.) fish.

B I. 12.8

YS I. 7. 177

A VI. p.p. 184, 206.

M 1391

Edible and appears to have been sold in the market. The word *Rohit,* occurring in the RV. (vii. 42.2), denotes the bright reddish colour of the sun. The word *Rohita* occurs in the *Rājanighaṇṭu* also.

Śakula—Occurs in the *Rājanighaṇṭu. Heteropneustes fossilis.* A kind of catfish. In Bengali, *Singi fish.* In the YV, it means "possessed of great strength"

Śukla YV. xxiii. 28

Ara lxxviii. 9a

Śāla—Occurs in the *Rajanighaṇṭu. Channa striatus.*

Śaṃkha

Same as *Kambu* (q.v).

Ara xx. 27b

Kis xxviii 33a, xxxix. 19a, xliii. 32b

Sun ix. 12a, xi. 2a, etc.

Yud xix. 14b, xxvi 42b, etc.

Utt vii. 9b, xxiii 7a, etc.

Saṃkucaka

Contracting *Dasyatis marginatus* In Bengali, *Śaṅkar* fish.

MV 1386

Śalyakā

Scaly fish

Yud XXV 18b

Śaphara (Śapharī)

A kind of bright little fish that glistens when darting about in shallow water (M. Williams).

Described as jumping out of water, and as being distressed at the drying up of the lake.

It may be either of the following genera—

Danio, Barilius, Chela.

Me. 42.

K IV. 39

G XIII. 3.

RS III. 3.

Sarpaśīrṣa (or śīrṣī)
Serpent-headed
Vas XIV 42.
Ap. I. 17 39.
Not edible.
Śapharī
RV I. 116.7
(Etymological meaning according to Sāyaṇa—that which, even though lying down, moves.)
Sarpa
Serpent.
Ādi xli. 22a
Ayo vi. 21a, xxviii. 9a, etc.
Ara xxxv. 4b, xxxix. 6b, lvii. 27a
Kis xv. 15b, xxxiv 23b, xli. 53a, 54b
Sun iv. 12a, v. 13a, xxiii. 22a, etc.
Yud xv 15a, xvi 30b, etc.
Utt vii. 21b, xxiii. 21b, etc.
Sarīsrpa
Reptile, snake.
Ādi xiii 30c.
Ayo xxv. 32b, xxviii 9a, lviii. 6b
Kis lx. 15a
Sun xxxiv. 17a, lxxviii. 16b
Utt xxvi. 26c, lxiv. 42b
Śatabali
According to commentator, Haradatta, it is called *Rohita*, and has innumerable scales.
Labeo rohita
In Bengali, *Rūi* fish.
Ap II 17. 2
Served to a Brāhmaṇa invitee, it is supposed to be very gratifying to the Manes in a *Śrāddha*.
See Kambu.
Simhatuṇḍa
Lion-faced
Bagarius bagarius In Bengali *Bāgāḍ* fish
MS V. 16
YS I. 7 177
MV 1386
Śiśumāra
Gangetic porpoise or dolphin (M Williams). Probably so called as it is believed to kill or devour its young ones.
Vas XIV 41
Bhāgavata Purāṇa V 23 4
Sun xxvii. 18a
Utt vi. 44b, xxxvi. 39, xlv. 18a
Mbh i. 185. 16 , xii. 29 27
Not edible.
Sora
Shark. *Carcharhinus gangeticus*.
MV 1385
Śṛṅgasora
Shark with horn. Saw-fish. *Pristis cuspidatus*.
MV 1385
Śṛṅgī
Occurs in the *Rāja-nighaṇṭu*.

Svarṇamīna

Gold-coloured. In Bengali, *Sarpunṭi*.

Puntius Sarana

MV 1391

Timi

Whale. Lit. that whose whole body is wet (with oil ?)

Balaenoptera. sp.

Ayo 81. 16

Ara xvii. 23a, lxi. 18a

Kis xliii. 14C

Sun 1. 2b, XXXV. 42a

Utt vii. 7a

R XIII. 10

MP 133.70

Timiṅgila

An aquatic creature. Lit. that which devours *Timi*

MP 133.70

Tomara

Gar fish, lance-shaped.

Belone annulata

MV 1390

Tumbaya

Gourd-shaped. In Bengali, *Bele* fish.

Glossogobius giuris

MV 1392

Ulkā : Same as Śiśumāra (q.v.)

Vaisarina

Pān V 4.16

Varmi

B 1 12.8

Edible.

Varṣābhū

Pān. VI. 4.84

Vidruva

Lit. nimble.

It may be any of the following species :

(1) *Chela* sp.

(2) *Rasbora* sp.

(3) *Danio* sp.

MV 1388

Visāra

Swift-moving fish.

RV. i. 79.1

Pān iii 3.17

INSECTS AND OTHER SMALL CREATURES

Ākhu

Mouse

Mus booduga

MS XI 159

Ali

Bee

Apis sp.

MP 131.50

Swarms of bees are stated to destroy crops.

Bheka

Frog

MP 257 13

A tree cut down for building purposes, if found like madder, indicates fear from frogs.

Bhramara

Bee

Apis sp.

Pān. IV. 3.119

Ayo. lvi. 13b, cxxv. 9a

Ara. lxviii. 16a, lxxxi. 17a

Kis. xlix. 14b, li. 30b

MP 39 6, 19, 161·63, 250.11

Sun xiv 24b, xviii. 16b, xxii. 35a

Yud. iii. 34a, xv 10a

Utt. xlv. 1 a VP. 70.64, 36.1-5, etc.

Bhṛṅgarāja

Bee-king. Species of a large bee.

Apis sp.

Ayo. CV. 12a

Ara. lxxxi. 13a

Sun. xvii. 9a, xviii. 20b

Yud. xv. 11a

Utt xlv. 11b

MP 219.18

According to MP., it hums at the sight of poison.

Daṃśa

Gad-fly

RV I. 162.9

MP 250.11

MS I. 40, 45

Cillika

Female of a cricket.

Gryllus domesticus (The house cricket).

Ādi, xxvii. 12b

Jhillika

Female of a cricket.

Same as *Cillikā*. The crickets are allied to Grasshoppers, but by habit, nocturnal, omnivorous and destructive to household belongings. Other genera of crickets are—*Gymnogryllus* sp. (The field cricket),

Gryllotalpa sp. (The mole cricket).
Ara. vii. 4a

Khadyota
Fire-fly.
Also known as Glow-worm. *Lampyris* sp., *Photinus* sp. order-*Coleoptera* (which includes Beetles and Weevils). The insect is nocturnal, with light-producing organs on the abdomen.
VP 6.7, 8.4

Kīṭa
Worm. The term applies to both helminthic worms and the true worms (i e, annelidans)
Ayo XXV 32a, xxviii 14a
VP. 69 298 ff

Kṛmi
It denotes helminth worms only, e.g., *Taenia solium* (The common pork tape worm), *Ascaris lumbricoides* (The common roundworm of man), *Ancylostoma duodenale* (The old-world hookworm).
Utt. XXV. 12a

Madhukara
House-fly—*Musca* sp.
Bee—*Apis* sp.
KS. II. 7.8

Madhupa
Bee
Utt. xxv. 27b
Fly, bee

Maksika
Fly
MS. I. 40
Ayo. xxviii. 14a
Ara. liv. 65b
Kis. li. 30b
MP 237 6, 250.11

Maṇḍūka
Frog
Rana sp.
Perhaps also toads, *Bufo* sp
RV. IX. 112. 4
X. 16 14 , 166.5
Ref ? S.B.
MS. XI. 131
YS III. 5. 270
Kis. xxxiv. 23b
Sun. lxxx. 19b
Utt. xxxi 9a

Maśaka
Mosquito
Aëdes sp. (*Stegomyia* sp.) (transmits human Dengue and yellow fever).
Anopheles sp.—transmits human malarial diseases.
Culex sp.—transmits human filarial diseases.
MS. I. 40, 45
Ayo. xxv 32a, xxviii 14a
Utt. vii. 3a
MP. 250.11

Matkuna
MS. I. 40

Mūṣika (Mūṣaka)
Rat, mouse
Mus sp.

Yud. xi. 38a VP. 58.61
MP. 118.58/237 9, 257 14

Patańga
Any flying insect, a grasshopper, a bee, butterfly or moth
Ādi. xiii. 30a, xx. 16b
Ayo. xxv 32a, xxviii 14a
Ara xxxiv 13b
Kis. Ix 29a
Sun. xxxviii. 36b, lvii. 27a, lxxxvii. 10a
Yud xix. 25b, xlv. 33b, liv. 53b, lxxvii 3b
Utt xxix. 43b

Pipilikā (Pipilaka)
Ant
Length 2 to 18 mm ; Ants belong to the fam. *Formicidae*. Insects living in colonies and societies with ranks such as king, queen, workers, soldiers, etc. The common genera are—*Formica* sp. which builds large 'ant-hills', *Solenopsis* sp.,—fire-ant which stings severely and *Monomorium* sp. (small black ant).
VP 69.298 f f
MP 181.20

Śalabha
Grassshopper, moth, locust
Grasshoppers and Locusts belong to the Fam: Acrididae order . Orthoptera, whereas Moth belongs to the Order Lepidoptera.
SurfaceGrasshopper—*Chrotogonus* sp.
The desert locust—*Schistocerca gregaria*
The Migratory locust—*Locusta migratoria*
Kis. xlv, Ib, xlvii. Ib
Sun. xxxix. 11a
Yud. xvi. 43b xliv. 38b
Utt. vii. 3a

Ṣaṭpada
Hexapod, i.e, any insect.
Bee (lit. that which has six feet).
Sun. xiv. 63a
Yud. xv. 8b

Vatara
Pān. IV. 3. 119

Vati
Pān V 2. 139

Vṛścika
Scorpion.
Palamnaeus sp., *Buthus* sp., *Arachnida*, *Chelicerata Arthropoda*.
Ayo. xxv. 32a, xxviii. 9a
Utt xxviii. 39b

Yūka
MS I. 40

REPTILES

Ahi
Serpent.
RV II. 12. 3
VII 30. 1.
S. B 5. 1. 5. 22.
S. B. 5. 1. 5. 22, 7. 4. 1. 29, 11. 5. 5. 8
Pān. IV. 3 56
Ayo. xlii. 3b.
Sun. xxxviii. 9b
Yu. xxxvi 12b

Andhasarpa
Typhlops sp.
A B. 3. 13. 2

Āśīviṣa
Ayo VII. 3a
Ara XXX. 19a, xxxiii. 31a, etc.
Kis V 23C, vii. 23a, etc.
Sun. ix. 54b, XC. 2a
Yud. iii. 39b, xix. 24a, etc.
Utt. xxxi. 43C

Bhujaga (Bhujaṅga)
Serpent (lit. moving in a zigzag way).
Sun. ii. 11b, v. 34a, etc.
Yud. cx. 40a
Utt. xlii. 40b. Ayo xvii. 1a
Kis. v 16b, lxii. 36a
MP. 146.65

Dvijihva (Same as Ahi)
So called due to its having a split tongue.
Ayo xlii 2a

Gonasa
Cow-nosed. A kind of large snake.
MP. 250.11 Bull snake—*Pituophis* sp. (non-poisonous).

Manthavala
A kind of serpent.
A B. 3. 13. 2

Nāga
Serpent.
Ādi. V. 22b, xli. 7b, 9a, xlvi. 31b, etc.
Ayo. xv. 7b, xxv. 27b, etc.
Ara. vii. 32b, xx. 29b, etc.
Kis. viii. 19a, xviii. 23b, xlii. 3a
Sun. vii. 13a, ix. 13b, etc
Yud. iv 35a, xvi. 61b, etc
Utt. vii. 18b, xvi. 10b, etc
VP (See Sarpa)
MP. 43 29, 133.25

Nirdaṃśi
A kind of non-biting snake.
A. B 3. 13. 2.
Natrix sp. (non-poisonous)

Thamnophis sp. (Gartere snakes)

Pannaga
Serpent.
Ādi. iv 53b, xiv. 19a
Ayo. xv. 6b, xci. 12b
Ara. xx. 29b, xxvi. 22b, etc.
Kis. v. 8b, xvi 41b, etc.
Sun. iii. 39a, vii. 46b, etc.
Yud iv. 39b, vi. 1b, etc.
Utt. ii. 8a, xxi. 63b, etc.
MP. 5.4, 8.7, etc.
If a tree, cut down for building purposes, is found to be dark-blue, it indicates fear from serpents (MP 257 13).

Sakala
A kind of snake.
A. B. 3 14. 5

Sarpa (Same as Ahi)
G. I. 64 ; XXII 27
Vas. XXI. 24
KS. VII. 2. 47
VP. 25 64ff, 70.10-3, etc.
MP (See Pannaga)
The *Prāyaścitta* for killing it is the same as that for killing a cat.

Svaja
A kind of snake.
A. B. 3. 13. 2

Takṣaka
Gecko lizard *Gecko gecko*. It is a non-poisonous lizard. So, the killing of the king Parikṣit by its bite seems to be a myth.
Ara xxxvii. 12b
Sun lxxx. 9b
Yud xxxvii. 62a
Utt xxiv. 4a, xxxI. 23a

Uraga (Same as Ahi)
Ādi xxxiv. 9a, XXXVIII. 15a, etc.
Ayo xix. 1b. XII 23a, etc.
Ara ix. 32b, xxxii. 23b, etc.
Kis V. 31b, X. 3a, etc.
Sun iii. 59a, iv. 14a, etc.
Yud xxv. 34b, xxvii. 18a, etc.
Utt. xxiv. 4a xxvi. 25b, etc.

Vyāla
Serpent.
Ayo. cii. 4b, cvi. 5a
Ara. i. 14b, v. 19b, etc.
Sun xlii. 36, xlvi. 6b
Utt. xciv. 15a

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TEXTS

Amarakośa Same as *Nāmaliṅgānuśasana* below)

Abhijñāna-śakuntala of Kālidāsa

Āpastamba-dharmasūtra

Agnipurāṇa

Aitareya Brāhmaṇa

Aṣṭādhyāyī of Pāṇini

Aśvavaidyaka of Nakula.

Do of Jayadatta

Baudhāyana-dharmasūtra

Bhaviṣya-purāṇa

Caraka-saṃhitā

Chāndogya Upaniṣad

Gautama-dharmasūtra

Gobhila-gṛhyasūtra

Harṣacarita of Bāṇabhaṭṭa

Kādambarī of Bāṇabhaṭṭa

Kumārasambhava of Kālidāsa

Mahābhārata

Mahābhāṣya of Patañjali

Mālavikāgnimitra of Kālidāsa

Mānasollāsa (Section on *Matsya-vinoda)*

Manu-smṛti

Matsyapurāṇa

Meghadūta

Nāmaliṅgānuśāsana

Ṛgveda

Rāmāyaṇa

Ṛtusaṃhāra

Śatapatha Brāhmaṇa

Suśruta-saṃhitā

Syainika-śāstra of Rudradeva

Tattvārthādhigama

Vaśiṣṭha-dharmaśāstra

Vāyupurāṇa

Vikramorvaśīya of Kālidāsa

Viṣṇu-smṛti

Yājñavalkya-smṛti

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154	(Between house and sṛmara)	Śṛgāla

The portion from 'As already stated' (p. 106, last but one line from bottom, above footnote) to 'that region' (p. 108, ninth line from bottom) may kindly be read after 'witnessing the fight' (p. 129, last line of text).

'Varana.....in a river' (p. 129, footnote) should be read as 'Vāraṇa.....Sindhura·····a river' under footnote 1, p. 109.

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